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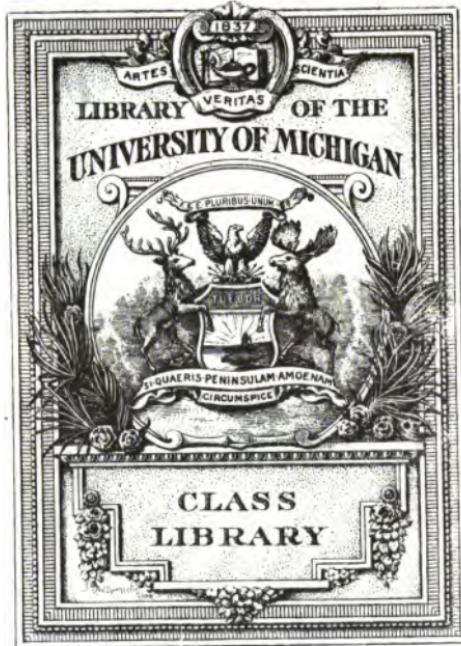
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U. S. DEPARTMENT OF AGRICULTURE,
FOREST SERVICE—BULLETIN No. 62.
GIFFORD PINCHOT, Forester.

GRAZING ON THE PUBLIC LANDS.

EXTRACTS FROM THE REPORT OF THE
U. S. PUBLIC LANDS COMMISSION.

[SENATE DOCUMENT No. 189, FIFTY-EIGHTH CONGRESS, THIRD SESSION.]



FORESTRY DEPARTMENT

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LETTER OF TRANSMITTAL.

U. S. DEPARTMENT OF AGRICULTURE,
BUREAU OF FORESTRY,
Washington, D. C., May 31, 1905.

SIR: I have the honor to transmit herewith certain parts of the "Report of the Public Lands Commission," recently printed as Senate Document No. 189, Fifty-eighth Congress, third session, and to recommend that they be published separately as Bulletin No. 62 of the Bureau of Forestry, under the title "Grazing on the Public Lands."

The regulation of grazing is an important part of the management of the forest reserves, and this bulletin will materially help to bring about a better understanding of the principles upon which the conservative use of the public range should be based.

The map and colored diagram forming a part of the original publication are necessary to the proper understanding of the subject.

Respectfully,

GIFFORD PINCHOT,
Forester.

Hon. JAMES WILSON,
Secretary of Agriculture.

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Map of the grazing lands of the western United States	In pocket.
Diagram of answers to questions regarding the public grazing lands	In pocket.

GRAZING ON THE PUBLIC LANDS.

THE PUBLIC LANDS COMMISSION.

The Public Lands Commission was appointed by the President October 22, 1903, "to report upon the condition, operation, and effect of the present land laws, and to recommend such changes as are needed to effect the largest practical disposition of the public lands to actual settlers who will build permanent homes upon them, and to secure in permanence the fullest and most effective use of the resources of the public lands."

This Commission consists of W. A. Richards, Commissioner of the General Land Office; F. H. Newell, Chief Engineer of the Reclamation Service, and Gifford Pinchot, Forester of the Department of Agriculture.

EXTRACT FROM THE SECOND PARTIAL REPORT OF THE PUBLIC LANDS COMMISSION.

In its second partial report, transmitted by the President to Congress on February 13, 1905, the Commission referred to the grazing problem as follows:

GRAZING LANDS.

"The great bulk of the vacant public lands throughout the West are unsuitable for cultivation under the present known conditions of agriculture, and so located that they can not be reclaimed by irrigation. They are, and probably always must be, of chief value for grazing. There are, it is estimated, more than 300,000,000 acres of public grazing land, an area approximately equal to one-fifth the extent of the United States proper. The exact limits can not be set, for with seasonal changes large areas of land which afford good grazing one year are almost desert in another. There are also vast tracts of wooded or timbered land in which grazing has much importance, and until a further classification of the public lands is made it will be impossible to give with exactness the total acreage. The extent is so vast and the commercial interests involved so great as to demand in the highest degree the wise and conservative handling of these vast resources.

"It is a matter of the first importance to know whether these grazing lands are being used in the best way possible for the continued development of the country or whether they are being abused under a system which is detrimental to such development and by which the only present value of the land is being rapidly destroyed.

"At present the vacant public lands are theoretically open commons, free to all citizens; but, as a matter of fact, a large proportion has been parceled out by more or less definite compacts or agreements among the various interests. These tacit agreements are continually being violated. The sheepmen and cattlemen are in frequent collision because of incursions upon each other's domain. Land which for years has been regarded as exclusively cattle range may be infringed upon by large bands of sheep, forced by drought to migrate. Violence and homicide frequently follow, after which new adjustments are made and matters quiet down for a time. There are localities where the people are utilizing to their own satisfaction the open range, and their demand is to be let alone, so that they may parcel out among themselves the use of the lands; but an agreement made to-day may be broken to-morrow by changing conditions or shifting interests.

"The general lack of control in the use of public grazing lands has resulted, naturally and inevitably, in overgrazing and the ruin of millions of acres of otherwise valuable grazing territory. Lands useful for grazing are losing their only capacity for productiveness, as of course they must when no legal control is exercised.

"It is not yet too late to restore the value of many of the open ranges. Lands apparently denuded of vegetation have improved in condition and productiveness upon coming under any system of control which affords a means of preventing overstocking and of applying intelligent management to the land. On some large tracts the valuable forage plants have been utterly extirpated, and it is impracticable even to reseed them. On other tracts it will be possible by careful management for the remaining native plants to recover their vigor and to distribute seeds, which will eventually restore much of the former herbage. Prompt and effective action must be taken, however, if the value of very much of the remaining public domain is not to be totally lost.

"The conclusions as to grazing reached by your Commission were based:

"First. Upon the results of long acquaintance with grazing problems in the public-land States on the part of each member of your Commission.

"Second. Upon the results of careful examinations made for the Commission of the grazing systems of the State of Texas, the State of Wyoming, the Union and Northern Pacific railroads, and of the Indian

Office in the case of permits to stockmen for the use of Indian lands suitable for grazing, and of the grazing conditions throughout the West. A map has been prepared showing the general location and area of the summer, winter, and year-long ranges, and the sections which are largely dependent upon a temporary water supply for their utilization in grazing, and those where there has been extensive development by wells and windmills. We believe that this map will be found exceedingly valuable and interesting in the consideration of all grazing problems, and it is therefore submitted in the appendix.

“Third. Upon the results of a meeting called to confer with the Commission by the National Live Stock Association in Denver early in August, 1904, which was attended by the Secretary of Agriculture and by representative stockmen from all the grazing-land States and Territories. The opinion of the stockmen present was almost unanimous in favor of some action on the part of the Government which would give the range user some right of control by which the range can be kept from destruction by overcrowding and the controversies over range rights can be satisfactorily eliminated, the only question being as to the most satisfactory method by which such right may be obtained.

“Fourth. Upon 1,400 answers received to a circular letter addressed to stockmen throughout the West. These answers show that under the present system the pasturing value of the ranges has deteriorated and the carrying capacity of the lands has greatly diminished; that the present condition of affairs is unsatisfactory; that the adoption of a new system of management would insure a better and more permanent use of the grazing lands; that a certain improvement in range conditions has already been brought about by range control on the forest reserves, and that the great bulk of the western stockmen are definitely in favor of Government control of the open range.

“Fifth. Upon facts presented at many public meetings held throughout the West and upon innumerable suggestions which have been received and considered.

“Your Commission concurs in the opinion of the stockmen that some form of Government control is necessary at once, but is opposed to the immediate application of any definite plan to all of the grazing lands alike, regardless of local conditions or actual grazing value. The following plan is intended to bring about the gradual application to each locality of a form of control specifically suited to that locality, whether it may be applicable to any other locality or not. Your Commission recommends that suitable authority be given to the President to set aside, by proclamation, certain grazing districts or reserves. To the Secretary of Agriculture, in whose Department is found the special acquaintance with range conditions and live-stock questions which is absolutely necessary for the wise solution of these problems,

authority should be given to classify and appraise the grazing value of these lands, to appoint such officers as the care of each grazing district may require, to charge and collect a moderate fee for grazing permits, and to make and apply definite and appropriate regulations to each grazing district. These regulations should be framed and applied with special reference to bringing about the largest permanent occupation of the country by actual settlers and home seekers. All land covered by any permit so given should continue to be subject to entry under reasonable regulations notwithstanding such permit."

QUESTIONS REGARDING THE PUBLIC GRAZING LANDS OF THE WESTERN UNITED STATES.

By ALBERT F. POTTER,

Forest Inspector, Forest Service, U. S. Department of Agriculture.

CIRCULAR TO STOCKMEN.

At the request of the Commission on the Public Lands, who desired to obtain information regarding the present condition of the public grazing lands throughout the West, a circular to stockmen (a copy of which is hereto attached) was prepared, asking questions regarding the use of the lands for pasturing live stock, and what, in the opinion of the stockmen, would be the most practical method of improving their condition and insuring their permanent utility for grazing purposes.

The method adopted for the distribution of these circulars was to secure from different live-stock associations the names of their members and from the county assessors and postmasters lists of names of resident stockmen of the different counties.

A selection was then made, with a view to reaching a proportionate number of stockmen in the different grazing States, and also of securing information and an expression of opinion from both large and small owners and those engaged in raising all of the different classes of stock.

It is believed that the greater portion of the answers are from the individual owners of stock, who would be classed as small stockmen, and a minor portion from representatives of corporations or the owners of very large numbers of stock.

ANSWERED CIRCULARS RECEIVED.

Fourteen hundred answered circulars were received from the different States interested, as follows: Arizona, 74; California, 104; Colorado, 163; Idaho, 112; Kansas, 26; Oklahoma, 10; Montana, 158; Nebraska, 55; Nevada, 35; New Mexico, 130; North Dakota, 30; South Dakota, 55; Oregon, 88; Utah, 121; Washington, 23; Wyoming, 216.

The large proportion of answers received have evidently been prepared with considerable care and study, showing the deep interest taken in the matter and its importance in the opinion of the writers.

Very few answers were received from others than those actually engaged in pasturing live stock upon the public domain, and in making up the tables only those owning stock were counted.

CLASS OF STOCK REPRESENTED.

It is found that the class of stock owned by the stockmen who have been heard from is represented as follows: Those engaged in raising cattle and horses, 517; cattle only, 383; sheep only, 195; cattle, sheep, and horses, 154; cattle and sheep, 119; sheep and horses, 17; horses only, 9; goats only, 6.

The large majority of the circulars are therefore seen to have been answered by those engaged in raising cattle, and the minority by those engaged in raising sheep. This is mainly accounted for by the fact that there are a great many more small ranchmen who graze small bands of cattle and horses upon the public domain than there are small ranchmen who graze sheep, the sheepmen usually being those who own a considerable number and make it their principal business.

In those States and Territories, however, where sheep raising is of most importance, there has been a comparatively good response from the sheepmen, as shown by the tables and diagrams for Arizona, California, Idaho, Montana, Oregon, Utah, Washington, and Wyoming, the only exceptions being Colorado, Nevada, and New Mexico. In Kansas, Oklahoma, Nebraska, North Dakota, and South Dakota sheep raising is of minor importance, only a very few being engaged in raising this class of stock.

ANSWERS TO QUESTIONS REGARDING THE PUBLIC GRAZING LANDS.

Proportionate answers to questions regarding the public grazing lands, received from 1,400 stockmen residing in Western States and Territories.

[NOTE.—The figures represent the number of persons giving each answer.]

State or Territory.	Which of the following classes of stock are you raising: Cattle, horses, sheep, goats?							How does the grass and other stock feed on your range at the present time compare with former years?			
	Cattle and horses.	Cattle.	Sheep.	Cattle, sheep, and horses.	Cattle and sheep.	Sheep and horses.	Horses.	Goats.	Poorer.	Better.	Unchanged.
Arizona.....	27	26	16	2	9	6	1	1	43	24	7
California.....	36	37	12	10	6	6	3	3	58	24	26
Colorado.....	76	67	6	6	3	3	2	1	74	64	20
Idaho.....	25	32	30	10	12	2	1	1	84	20	8
Kansas and Oklahoma.....	23	13	1	1	1	1	1	1	11	15	10
Montana.....	42	24	33	34	20	4	1	1	94	33	29
Nebraska.....	35	16	2	2	1	1	1	1	11	26	6
Nevada.....	17	8	1	6	4	1	1	1	20	11	4
New Mexico.....	38	52	16	12	8	2	2	2	70	41	19
North and South Dakota.....	54	16	2	6	6	1	1	1	43	27	17
Oregon.....	32	15	9	8	20	1	3	1	61	15	12
Utah.....	32	24	30	18	17	1	1	1	72	36	9
Washington.....	4	3	5	7	3	1	1	1	13	8	1
Wyoming.....	76	50	33	33	18	4	2	1	72	106	27
Total.....	517	383	195	154	119	17	9	6	729	460	198

Proportionate answers to questions regarding the public grazing lands, received from 1,400 stockmen residing in Western States and Territories—Continued.

State or Territory.	Has the carrying capacity of the ranges increased or diminished?		If it has increased, what has been the cause of such change?		If it has diminished, to what extent has this been due to overstocking or to the manner in which the stock has been handled?	
	Diminished.	Increased.	Feeding pastures.	Irrigation and cultivation.	Increased rainfall.	Control by ownership of ranches.
Arizona	63	7	1	3	2	1
California	76	8	6	2	2	1
Colorado	118	88	6	11	2	1
Idaho	96	15	1	2	2	1
Kansas and Oklahoma	14	17	8	2	4	3
Montana	111	30	4	3	12	1
Nebraska	33	29	9	7	11	4
Nevada	33	2	1	1	2	1
New Mexico	102	18	4	9	3	2
North and South Dakota	57	21	4	4	7	1
Oregon	68	20	9	5	3	4
Utah	107	13	5	2	27	80
Washington	18	5	1	1	1	13
Wyoming	135	51	10	16	3	8
Total.	921	276	69	59	53	42
					752	39
					188	167
					141	141
					51	51
					47	47

State or Territory.	Does the sale of farm products in your locality depend upon live stock which are ranged upon the public domain during a portion of the year?				What, in your opinion, is the most practical method for the proper control and permanent improvement of the public grazing lands, etc.?			
	Yes.	No.	To a greater extent.	The sale of hay only.	Individual pastures.	Community divisions.	The development of water.	Sell the grazing land.
Arizona	23	23	12	1	4	30	25	17
California	50	24	12	1	12	22	22	6
Colorado	45	36	38	19	9	64	48	7
Idaho	55	5	16	30	3	18	55	7
Kansas and Oklahoma	16	9	4	24	14	6	21	3
Montana	71	28	24	14	6	61	22	13
Nebraska	24	13	5	1	6	6	29	2
Nevada	12	8	6	6	3	11	6	6
New Mexico	37	51	11	1	13	65	27	11
North and South Dakota	19	30	15	13	3	36	14	12
Oregon	48	13	13	13	3	38	32	1
Utah	36	13	46	13	6	31	55	8
Washington	1	11	3	2	10	4	2	4
Wyoming	103	41	35	10	4	96	32	14
Total	546	295	247	112	78	582	353	112
						97	64	44
						97	64	34
						11	8	27
						11	8	22

Proportionate answers to questions regarding the public grazing lands, received from 1,400 stockmen residing in Western States and Territories—Continued.

State or Territory.	Do you favor Government control of the ranges under reasonable regulations, etc.?			What plan would you suggest which would permit bona fide homestead settlements on agricultural lands within a grazing district, etc.?						
	Yes.	No.	Unanswered.	Rigid enforcement of the law.	Allow entry by homestead only.	Compulsory cultivation of claims.	Require all homesteads fenced.	Inspection of all claims.	Classify the lands.	Allow no entry during lease.
Arizona	62	8	4	3	9	4	2	2	7	2
California	70	22	12	4	2	4	5	3	3	1
Colorado	129	24	10	10	10	10	3	9	8	4
Idaho	91	12	9	15	14	9	3	5	4	1
Kansas and Oklahoma	27	4	5	4	2	4	6	12	11	1
Montana	112	24	22	11	24	5	6	3	1	1
Nebraska	41	6	8	4	3	1	2	5	1	1
Nevada	27	5	3	5	3	1	16	5	6	3
New Mexico	98	21	11	9	11	5	6	1	2	1
North and South Dakota	55	16	14	9	15	6	1	8	5	1
Oregon	81	4	3	16	21	2	10	6	8	1
Utah	104	11	6	11	20	10	5	1	8	1
Washington	18	3	2	4	12	20	20	16	6	12
Wyoming	175	23	18	23	12	20	20	6	14	14
Total	1,090	183	127	125	121	91	74	66	56	

PRESENT CONDITION OF THE GRASS.

Regarding the question relating to the present condition of grass and other stock feed on the ranges, the answers given relate almost entirely to the season of 1904 as compared with other recent years, and are greatly influenced by the amount of rain during the past summer. In Arizona, for example, about one-third of the stockmen heard from report the grass as being better than usual, while at the same time only one-ninth of the same report the general carrying capacity of the ranges as having increased. Taking Arizona for example, the facts are that during the period from 1884 to 1890, Arizona was favored with a series of comparatively good seasons, and owing to the general prosperity of the cattle business at that time many new ranches were established there and large herds of cattle brought in from Texas and Mexico. The ranges became very heavily stocked, the number of cattle exceeding that which should have been ranged, even under favorable climatic conditions.

Then came a series of droughts from 1890 to 1894, during which there was a very light rainfall and consequent shortage in the forage crop. Owing to this scarcity of feed, stock became thin in flesh and the losses during the winters of 1891 and 1892 were enormous. Stockmen became discouraged, and a very large number of the men who had come in during the eighties commenced shipping out again, and from 1894 to 1897 there was a general exodus of cattle from the country.

In some cases in northern Arizona the abandoned cattle ranges were restocked with sheep, but in general the ranges have not been restocked nor since regained their former good condition. Ranges which formerly supported 100,000 head of cattle are not now carrying

more than 10,000. During the early part of the past season these ranges again suffered from a severe drought, and losses of stock were quite heavy. Range matters were in a critical condition when in the latter part of July the drought was broken by heavy and continued rains.

An increased amount of rainfall over the Western States during the past season has been quite general, and range conditions have been greatly improved over former years. It will be noticed that in all of the States and Territories under consideration the proportion reporting the present condition of feed as better than usual exceeds the proportion reporting the general carrying capacity of the ranges as having increased.

THE CARRYING CAPACITY OF THE RANGES.

The question regarding the carrying capacity of the ranges has evidently been answered in most cases by a comparison of recent years with range conditions during the early days of the range-stock business, and shows very plainly that under present conditions the greater portion of the public grazing lands are not supporting the number of stock they did formerly.

The answers do not represent differences of opinion concerning the same areas, but refer to the condition of the particular portion of the range which the writer is using, so that, for example, we learn that the carrying capacity of the range in Utah has diminished on the portions being used by 107 of the stockmen heard from and that it has increased on the portions used by 13.

It will be noticed that the proportion of decrease is much greater in the arid States and Territories, such as Utah, Nevada, Arizona, and New Mexico, than it is in the more humid regions. This to a certain degree represents the influence of droughts in causing a decrease in the pasturing value of the lands.

On the whole, it seems very evident that the free-range system has been a destructive one and that the situation is one which demands grave consideration.

CAUSES OF INCREASE IN PASTURING CAPACITY.

Where the carrying capacity is reported as having increased, it has been mostly due to *fencing pastures*. It has been found that wherever the range is protected by fencing, and the overstocking of pasture lands is thus avoided, the condition of the range has at once improved and the amount of forage increased. Better care is taken of the stock; losses from straying and death are lessened; a better grade of stock is raised, and in every way a better use of the lands obtained.

For the reasons above stated, as well as for the protection of personal interests, much public land has been illegally fenced, in some States more than in others, but to a certain extent in all of the Western States and Territories. This has been a vexatious question to the Government, and success in the enforcement of the law has depended to a greater or less degree upon the sentiment of the people in the different localities. Where such divisions of the range

are mutually agreed upon, there is no complaint made against anyone, and usually the Government meets with limited success in securing convictions.

In comparing the condition of the land under illegal fence with that outside which is used as free range, it is found that almost invariably it has improved, and a more economic use of the forage has been obtained. Consequently it is a grave question whether or not the fencing has been detrimental to the best interests of the people at large, and if it would not be best to provide a way in which such fences could be maintained in accordance with the law.

Irrigation and cultivation come next in importance. The use of the public lands for grazing has been increased in two ways by irrigation:

First, by enabling stockmen to raise winter feed on irrigated lands, the adjoining lands are given a short period of rest during feeding season, and actually carry an increased number of stock during the balance of the year. In addition, the stockman is insured against winter loss, and his business placed on a sounder basis. Again, summer ranges, which were not used to their full capacity previously on account of lack of range suitable for wintering, have been fully utilized by providing winter feed on irrigated lands adjoining.

A good illustration of the advance of this system is furnished by J. M. Carey & Bro., who write regarding their ranch in Converse County, Wyo.:

Irrigation of available bodies of land has increased the tons of forage very much. We have grown this year nearly 5,000 tons of hay. When we bought the ranch it only produced 30 tons of hay.

Second, by building little dams in the coulees or arroyos and diverting the water, the forage crop upon the grass lands has been greatly improved and the pasturing capacity increased. In some localities, particularly in Montana, this system has improved the grass to such an extent that good crops of hay are cut, and winter feed thus provided.

Improvement of the range by increased rainfall is beyond doubt one of the most satisfactory and economical methods, but as yet is somewhat unreliable. The possibility of increasing the amount of rainfall by an extension of the forested area has been the subject of scientific inquiry during recent years, but definite conclusions have not been derived from such investigations, and at present no plan can be offered which will assure an increase in rainfall.

Control of adjoining range through the ownership of ranches has been the most common method of range protection throughout the West, as well as one of the most effective. If a ranchman secures title to the watering places on a range, it has been customary to recognize his claim to the use of the adjoining lands for grazing purposes. In case of controversy he could fence up the water, and thus prevent stock other than his own from using the range.

Stockmen have been large purchasers of State lands, forest-reserve scrip, etc., and in their selection have taken lands located along the streams for the purpose of controlling the water, and in 40-acre tracts covering springs and lakes.

Only exceptional cases exist, however, where any one person or corporation has secured all of the watering places on a range, and the

competition between the owners of different watering places on the same range has often been so great as to result in its being overstocked and its pasturing value injured.

Forest-reserve regulations have resulted in an improvement in the condition of the summer grazing lands by restricting the number and class of stock allowed in each particular area to a number there was sufficient feed for; by limiting the season during which grazing would be allowed to the time when the forage could be used to the best advantage, and preventing its destruction by reason of the stock entering too early in the season, and by requiring the stock to be handled in a way which would insure the best use of the range. The greatest improvement in condition of the range by forest-reserve control is reported from Utah, where a few years past the greatest opposition to the reserves existed among the stockmen. Through proper management of the summer ranges it has been demonstrated that the forest reserves are one of the most important factors in securing permanent improvement in the condition of the range, and stockmen are beginning to realize the beneficial results of such control.

CAUSES OF DECREASE IN CARRYING CAPACITY.

Overstocking has undoubtedly been by far the greatest cause of range destruction and decrease in its carrying capacity. Under the free-range system of the West there has been very little restriction as to the number of stock anyone had the privilege of pasturing on the public domain, and owing to the opportunity offered to engage in the business of stock raising and to the apparently alluring chance of money-making, the ranges of many sections soon became overcrowded and commenced to decline in their pasturing capacity.

Serious controversy arose over the use of the range between cattle owners and sheep owners, and also between the different owners of the same class of stock. No one thought of reducing the number of his stock, but each stockman exerted himself to keep the other fellow off of what he claimed as his range. In this struggle for supremacy in range control little consideration was given to the future utility of the range itself, and it fast became a proposition of getting all there was in it while it lasted.

It is not to be wondered at that under this system of management the pasture lands rapidly declined in their grazing value and carrying capacity.

Drought has also been responsible for a considerable portion of the decrease. The ranges have as a rule been stocked on the basis of their capacity during normal or good years, and consequently whenever there came a season of drought they have been found to be overstocked. When two or three of these dry seasons have occurred in succession the seed crop has been short and the growth of grass has naturally grown less every year.

In addition, water has been more scarce, many lakes and springs entirely drying up, and stock has been compelled to travel long distances between the feeding and watering places, thus greatly increasing the amount of forage destroyed by tramping. The concentration of large numbers of stock around the few watering places has often caused the country for several miles around to be entirely tramped out.

Excessive sheep grazing is charged as the cause of serious injury to many sections of the range pasture lands. The controversy between owners of cattle and sheep is of long standing and has been the cause of serious loss of life and property.

As portions of the range have come under better control through stockmen (both cattle and sheep owners) securing title to or leasing certain lands, this controversy has been gradually reduced and conflicts are of less frequent occurrence, but it will continue to a certain extent as long as there is free range to quarrel about.

The greatest damage at the present time is charged against what are termed "transient" or "tramp" herds of sheep, usually bands of sheep being driven from distant ranges to points of shipment or being driven between summer and winter ranges, which are often long distances apart and sometimes located in different States. These bands are often owned by men who have no ranches or regular range, and who have no interest in the country other than to make all the money they can while the opportunity lasts. Sometimes they are not even citizens of the United States, and have no intention of becoming such, but only wish to make a stake and return to their native land. They just drift around in search of good feeding grounds, and camp wherever such areas are found, regardless of the interests of anyone else. As the sheep are constantly under herd they can stay just as long as there is any grass, and move without trouble whenever the feed is exhausted, the result being that the range is kept grazed off close and soon suffers from the result of overgrazing. In some localities the range has been overcrowded and injured by this system of grazing until it has become almost impossible for settlers and homeseekers to find pasture for the small herds of cattle and horses necessary for their success in the establishment of a home.

In a number of the Western States it has been the subject of local legislation, and the usual remedy applied has been the imposing of a license tax. As a rule the result has been that the tax was paid and the overgrazing continued. The most effective law for the protection of the settler is that of Idaho, which imposes a fine for driving herded stock nearer than within two miles of a cultivated ranch. The extent to which this law has been enforced, of course, depends largely upon the public sentiment, and it has not very greatly influenced the general use of the public grazing lands.

The most effective way of checking the evil results of excessive sheep grazing is to divide the range into districts and only allow it to be pastured under permit.

Methods of handling have also had much to do with the decrease in the pasturing value of the lands.

In handling cattle probably the greatest damage has been from their concentration around certain watering places. There has been no particular incentive for a stockman to provide numerous watering places on the free range because unless he owned the land he has had no protection in its use, and consequently money has been spent for such improvement on public land only when it was absolutely necessary.

Another disadvantage in handling stock on the free range is that on the all-year-round range it is all used at the same time and does not produce as good crops of forage as it would if it could be divided and used a portion at a time. This has been proven on tracts which

have been fenced. Each portion is then given an alternate period of rest and the grass has a chance to reseed the range naturally.

In handling sheep much damage has been done by herding the bands too closely and by camping too long in the same place. In herding, if the sheep are allowed to scatter out as much as possible and feed naturally, they do much less damage and feed to better advantage than if they are bunched up close and constantly driven along.

In bedding, the sheep have often been camped too long in the same place, sometimes for a month or more and until the grass and forage for a mile or two around the camp would be completely eaten out. Damage from this cause is usually entirely unnecessary, and is now strictly avoided by all sheepmen who have an interest in the future welfare of the ranges.

Premature grazing, or putting the stock on the range too early in the season while the feed is yet immature, is one of the greatest evils in the destruction of forage on the summer ranges. Lack of range control is usually responsible for this condition. If the number of stock to be driven to the mountains for summer pasture exceeds the number there is sufficient pasture for, there is often some particular section of the range which one man desires to secure ahead of his competitors, and in the struggle to get there first the stock are driven along as fast as possible and destroy as much feed by tramping as they consume in feeding.

A much better utilization of the range would be secured if the stock were kept off until the feed was ready for pasturing and then not to allow it to be overstocked.

As portions of the range have been brought under control through the purchase of lands and fencing by stockmen, and by the creation of forest reserves by the Government, it has been clearly shown that the evils of overstocking, methods of handling, and premature grazing can be overcome by proper management and reasonable regulation.

Settlement has reduced the area open to grazing, but has not been largely responsible for actual decrease in the carrying capacity of the lands, except so far as the settlers have helped to overstock the vacant lands. In answering this question probably most of the stockmen had in mind the decrease in area rather than the range condition. It is claimed in some sections that settlers have prevented the use of adjoining grazing lands by fencing up all of the water and also by driving stock away from unfenced cultivated land, but, on the whole, probably this has not very greatly influenced the use of the grazing lands.

THE SALE OF FARM PRODUCTS.

One of the very important matters in connection with the range problem is the extent to which the market for local farm products depends upon live stock. In many of the irrigated districts of the West the principal crop raised is alfalfa, and its sale depends largely upon converting it into beef and mutton through the medium of feeding cattle and sheep. This is notably the case at Phoenix, Ariz.; Bakersfield, Cal.; Lamar, Las Animas, and Fort Collins, Colo.; along the Snake River, in Idaho, and the Humboldt River, in Nevada, all of which are extensive feeding points. Cattle from the ranges of Arizona supply Phoenix with feeders. Bakersfield receives shipments

of cattle from Arizona and New Mexico, and in addition to the supply from the ranges of southern California. Large shipments of lambs are made from Arizona and New Mexico to Lamar, Las Animas, and Fort Collins, Colo., and are there fattened for the market.

In Idaho it is estimated that during last winter 300,000 head of sheep were fed in the valley of the Boise and Snake rivers, between Boise and Weiser. In eastern Oregon the utilization of the hay crop depends entirely upon live stock, and in Nevada large numbers of both cattle and sheep were fed along the valley of the Humboldt.

In the corn belts of Kansas, Nebraska, and Missouri cattle and sheep from the western ranges furnish the medium through which the crop is marketed. In fact, the agricultural prosperity of the entire western commonwealth depends largely upon stock feeding.

As new areas are reclaimed and brought under cultivation by the Government through the building of storage reservoirs under the irrigation act, the proper care of grazing lands to be used in connection with the cultivated lands becomes a matter of great importance.

In hundreds of places remote from transportation farming is only made profitable through raising live stock to consume the products of the farm. Cattle and sheep which are pastured in the mountains during the summer are driven to the fields in the fall after the crops have been harvested and there fed during the winter. In addition to the regular feeding, much rough forage and stubble pasture is utilized which would otherwise be wasted.

Many of the stockmen have qualified their answers by saying "to a great extent," "to a small extent," or "the sale of hay only." If these are added to the number of those simply saying "yes," the total represents fully three-fourths of those heard from, and indicates the general importance of this question.

METHODS FOR CONTROL AND IMPROVEMENT.

Regarding the most practical method for the control and improvement of public grazing lands, it is generally believed that this can be best accomplished by giving the stockmen control of the respective ranges they are now using, as nearly as possible, and protecting them in its use by such regulations as are found necessary.

The opinion as to whether this can be done best by the establishment of districts to be used jointly by a large number of stockmen under a permit or license system or by the granting of permits or leases for individual pastures is governed very largely by the natural range conditions of the particular section of the country in which the stockman resides or is pasturing his stock.

Individual pastures are favored wherever the conditions are such that the range is well watered naturally or that water can be developed by wells and windmills, the altitude and climate such that stock can be ranged the year round, the summer ranges uniform and adjoining or in the immediate vicinity of cultivated lands used for raising winter feed, or, in fact, wherever it is considered practicable to divide the range into individual pastures. It is believed that the most satisfactory results and greatest improvement will be obtained by individual effort. Whenever a stockman is assured that he will have the exclusive use of a particular area, he at once has an interest in its welfare. He knows that he will get the benefit of whatever

improvement he makes. He can take better care of his stock, reduce his losses from death and straying, improve the grade of his stock by better breeding, and in every way manage his business on a more practical and safer plan.

Community divisions are favored where the natural conditions are such that it is not considered practicable to divide the range into individual pastures. Either the summer range is such that it must be used jointly, the stock gradually working up the mountain slopes in the spring as the snow disappears, grazing on the higher portions during the middle of the summer, and working back down again in the fall after summer rains have produced a new crop of forage on the lower slopes, or the summer and winter ranges are located a long distance apart, sometimes requiring stock to be trailed for 200 or 300 miles from one to the other, and the winter ranges are often of such character that it is impossible to foretell just what portion can be used on account of uncertainty of feed and water.

In Colorado there is a marked division and difference between the eastern part of the State and what is known as the western slope. East of a line drawn north and south across the State, running through the city of Pueblo, the conditions on the greater portion of the range are favorable for individual pastures, and most of the stockmen express themselves in favor of such division; while in the western portion of the State the summer ranges are of such character that they are best utilized by a large number of different owners pasturing their stock on a certain division jointly, and consequently the opinion is in opposition to individual pastures and in favor of community divisions.

In Nebraska, Kansas, and Oklahoma the conditions are usually favorable for individual pastures, and the expression of opinion in their favor is almost unanimous. In Idaho and Utah the conditions are almost the opposite, most of the pasture lands being either strictly summer or winter ranges and of such character as to require their joint use, and consequently the plan favored by most stockmen of these States is that of grazing districts or community divisions. In Arizona, New Mexico, California, Oregon, Washington, Nevada, Montana, Wyoming, North Dakota, and South Dakota many different classes of range exist, and opinions consequently differ as to the best method of control.

It is very evident that each district must be handled in accordance with the existing conditions, and that there is danger in the enforcement of regulations not suited to such conditions.

Limiting the grazing season is one of the methods advised for the improvement of the pasture lands, and is a matter of importance in connection with the proper management of grazing. The best use of the land is always secured when stock are not allowed to graze thereon until the feed has sufficiently matured, and taken off as soon as the forage crop has been harvested. Good results have been obtained on the forest reserves through limiting the grazing season, and great improvement has been made in the condition of lands held under private ownership. This can not be applied on the public grazing lands, however, until they have been placed under some system of control, such as the establishment of reserves, grazing districts, or the granting of permits for the exclusive use of certain portions of the land.

The development of water as a means of range improvement is mentioned in all of the States. There seems to be a general demand for legislation which will encourage the building of reservoirs and the digging of wells for stock-watering purposes. The present law, which requires that such improvements on public land must be left open for public use, is unsatisfactory and does not secure the results desired. It is not expected that the Government will develop water for stock-watering purposes at its own expense and furnish it free to stockmen, although it might be good public policy for experimental work along this line to be done on some of the arid lands, especially in boring for artesian water; but what is needed is a plan of some kind which will give the stockman a means of getting a reasonable return for money spent in such improvement by having some degree of protection in the use of adjoining grazing lands.

Reseeding the ranges is advocated by many as a means of restoring the grasses in sections where it has been destroyed. On some few limited areas this has been done quite successfully, usually the most favorable places, such as mountain meadows or portions of the range which could be inclosed by fence, having been selected. The expense and lack of range control, however, have prevented any very extensive improvement of the pasture lands by sowing new seeds.

The Government is doing valuable work at the various agricultural experiment stations throughout the West in making investigations along this line and ascertaining the adaptability of certain grasses and forage plants to the soils and climatic conditions of the different ranges. It is the proper function of the Government to do the experimental work and publish bulletins giving the public full information of the results of such experiments, and advice regarding the application of any knowledge thus obtained, but it seems proper that those who will receive individual benefit from the use of the land should be the ones to apply this knowledge and do the actual work of reseeding. Therefore it would appear that it only remains to provide such means as are necessary to encourage the more extensive application of this system of range improvement by the stockmen.

Irrigation and cultivation is the most important factor to be considered in improving the condition of the range and increasing its carrying capacity. One acre of irrigated alfalfa will produce as much forage as 20 to 30 acres of ordinary grass land under fence or double that amount of uninclosed western free range. Every acre of land which can be brought under cultivation by irrigation is as good as 25 acres of fenced grazing land or 50 acres of free range.

The evolution of the western range from overgrazed grass land to cultivated land is brought about largely in the following manner: First, a portion of the range is inclosed by fence, and with this protection and proper use the grass immediately improves. The stockman prospects around for water, cleans out and improves the flow of springs, and finds places where water can be had by digging wells. Having succeeded in getting his pastures sufficiently watered for grazing purposes, he then gives his attention to seeing what can be done in the way of raising winter feed. Portions of the best land are set aside for cutting wild hay; experiments are made in raising crops of sorghum, Kafir corn, and other forage which can be grown without irrigation; and these efforts, often meeting with success, are followed by trying different varieties of small grain. Wherever

there is sufficient water for irrigation, the land is usually seeded with alfalfa, and immediately furnishes an increased amount of feed, as before stated. The result is that it is soon found that the carrying capacity of the area has been doubled, the quality of the stock improved, and the bank account of the stockman gradually increased.

This attracts the attention of others, and soon new divisions of the range are made. Settlers are attracted by the success of stockmen in raising winter feed, and try more varied farming. Thus the country gradually changes to a more thickly settled and prosperous condition.

There is no doubt but that by the continued increase in the area of irrigated and cultivated land, and by an improvement in the management of the pasture lands, the live-stock industry of the West will continue to prosper and hold its place among the important industries of the country.

Homesteads of 640 acres are advocated by many of the stockmen of South Dakota and a few on the ranges of eastern Wyoming and eastern Colorado. The usual claim made is that 160 acres of land of such character as that which is now vacant in these localities is not sufficient to afford a settler the means of making a living for his family, and that the amount should therefore be increased. This opinion has been formed largely by the action of the law known as the "Kinkaid act," which applies to the neighboring State of Nebraska. Investigations of the actual results of the application of this law will furnish such information as is necessary to decide whether or not this has been a good thing for the country.

It seems to follow that if this policy is adopted it will only be a short time until all the land of such class as will afford a living on 640 acres will be exhausted, and there will then be a demand for four-section homesteads of 2,560 acres; and following along this line it would be necessary ultimately to give 25,000 acres of much of the arid grazing land of the southwest.

In view of the unknown possibilities of future agricultural development, it would appear to be better public policy to retain the title to the lands, and only grant their temporary possession for use in pasturing live stock.

To sell the grazing lands to the stockmen is a method advocated by many, the idea being that the lands should be classified and that the portion not now valuable for cultivation or which can not be reclaimed by irrigation should be graded and sold for grazing purposes at an appraised valuation. It is claimed that by this method the desired improvement in the condition of the lands would be secured, and at the same time the land would be producing a revenue by taxation. There is no doubt that this would be advantageous to the stockmen who secured the land, and that its condition would be improved and its carrying capacity increased; but this method is open to the same objection before given, the unknown possibilities of its future agricultural value.

"LET US ALONE!"

There is an expression of opinion from some sections that range matters will adjust themselves by the natural changes brought about in the gradual settlement of the country, and that it is unsafe for the

Government to undertake to regulate the use of the vacant public lands. It is claimed by many that they can not afford to pay anything for the use of the lands, and that the collection of a grazing fee would mean bankruptcy to them. It is feared that under any system of control the large owners and corporations would secure a monopoly in the use of the pasture land, and the small owners would be shut out. It is claimed that young men starting in the business of stock raising would have no opportunity to build up under a permit or lease system. It is feared that the stockman would suffer from the political influences which would be brought into the question, and from the action of dishonest officials; and it is feared that in the inauguration of any system of control it will be found that many sections of the range are overstocked, and that there will not be sufficient range to go around, and consequently someone will have to be denied the grazing privilege, and there is great uncertainty as to just who will be able to continue in the business and who will be forced to retire.

In some sections the range controversies have about all been fought out, and mutual agreements now exist among the occupants of the range regarding all matters pertaining to its use. It is thought that Government control would upset this condition and cause endless trouble in the readjustment of affairs. Although range conditions are not entirely satisfactory, it is thought best to continue under the present system and laws rather than to take any chances on the result of the application of new methods; and consequently stockmen who are of this opinion say "Let us alone!" It will be seen by reference to the table, however, that only 64 out of 1,400 have expressed themselves as being of this opinion.

GOVERNMENT CONTROL OF THE RANGES.

In answer to the question as to whether or not Government control of the ranges under reasonable regulations made to meet local conditions, and providing for a proper classification of the lands is favored, of the 1,400 stockmen heard from, 1,090 have expressed themselves in the affirmative and 183 in the negative, 127 having avoided answering the question. This appears to be very conclusive evidence that the large majority of stockmen consider the present condition unsatisfactory, and desire the enactment of some form of legislation which will place the ranges under better control and encourage their improvement.

This expression of opinion does not seem to be in any way local, but is in about the same proportion from all of the different States and Territories. It is modified in some States by the large amount of grazing land now in private holdings, such as private land grants, railroad land grants, etc., and in South Dakota by the desire for 640-acre homesteads; but where the major portion of the range is vacant land, or what is termed free range, the sentiment appears to be very strongly in favor of Government control.

In the travels of the writer over the western range country during the past season in connection with the work of securing data for the preparation of the map showing certain classes of grazing lands, which is also presented to the Commission for its information, endeavor was made to meet and talk with as many stockmen as possible at all of the different points visited, getting their views regarding

all matters pertaining to the use of the public lands for grazing, and their opinions as to what was needed to improve the condition and insure the permanent utility of the lands.

Fully four-fifths of the men thus interviewed expressed themselves in favor of some form of Government control, either by the creation of grazing districts or the leasing of tracts to individuals, and all wished this done in a way which would not retard the development of the country and would allow the settlement of agricultural lands. The sentiment among stockmen seems to be rapidly changing in this regard, and many who formerly opposed any form of control or leasing are now in favor of such action, provided the change is brought about gradually and with care to avoid any unnecessary disturbance of present range divisions and methods of use.

HOMESTEAD SETTLEMENT IN GRAZING DISTRICTS.

It is almost the unanimous opinion of stockmen that in the adoption of any new system of management for the public grazing lands, ample provision should be made for the gradual settlement of the country by actual home seekers.

Many think that entries should continue to be made under the existing laws, but that the law should be more rigidly enforced and every precaution taken to insure the faithful performance of all of the requirements of the act under which entry is made.

It is thought by many that an inspection of all claims by a Government official would be the most practical method of protecting the stockmen against entries by bounty jumpers or for the purpose of speculation, and that this would also prevent securing title to land without complying with the provisions of the law.

Others believe that it would be best to allow entry under the homestead act only. While this would apparently insure that the land would be taken by bona fide settlers only, at the same time it would restrict the entries to those having a homestead right, and would be likely to retard settlement somewhat.

Another opinion expressed by many is that the class of entry is of minor consequence, but that the important point is to require that a certain portion of each claim shall be actually cultivated. It is argued that if this were done it would defeat the larger portion of fraudulent entries and insure the actual settlement of the land.

Another method proposed is that the Government should require anyone making an entry within a grazing district to fence their lands. In States where the local laws do not require lands under cultivation to be fenced, and stock trespassing thereon are liable to suit for damage, if the settler is not required to fence his land the stockman must either herd his stock, or build a fence around the cultivated land at his own expense. In districts where the land is almost entirely grazing, this seems to be unfair to the stockman, and he believes that in allowing settlement within a grazing district the Government should include among the improvements required upon the land that it should be fenced within a certain time after entry.

Another plan proposed is that the lands be classified, and in the granting of grazing permits all lands classed as agricultural be excepted from the area for which a permit is given, and left open to entry by settlers, but that no entry be allowed on lands other than those specified during the term of permit.

The most extreme view is that expressed by a few who favor an absolute lease of the land, and that no entry of any kind be allowed during the term of the lease.

It is the opinion of the writer that the first step in the inauguration of a new system of management for the public grazing lands should be to classify the lands. Those which are likely to be in demand or are suited for agriculture should be so classified and should remain open to entry.

Those which under present conditions are only suitable for grazing should be so classified, and entry or settlement should only be allowed under such conditions as offer a reasonable assurance of the successful establishment of a home. New men engaging in the stock business should be allowed the use of enough land to support a home, the development of ranches suited to the support of a single family being the condition desired for the best use of the public grazing lands. When a district is fully occupied by such ranchmen, no further division of range should be made or new entries approved.

All lands should be reclassified whenever changes in conditions warrant such action.

Before a patent is issued for any unperfected entry within a grazing district an inspection should be made, under direction of the supervisor, to ascertain whether or not all of the provisions of the law have been complied with, and whenever it appears that an entry has been made for purposes other than those contemplated in the law, patent should be refused and the entry canceled.

MAP OF THE GRAZING LANDS.

The map presented with this report has been prepared for the purpose of showing the general location and area of some of the different classes of grazing lands in the western portion of the United States, more particularly in reference to the possibility of their use at different seasons of the year and under certain conditions.

The data compiled are from personal observations made during an experience of seventeen years (1884 to 1901) in the live-stock business, raising cattle, horses, and sheep on the free range, in the Territory of Arizona; from information gained in the examination of proposed forest reserves in the States of Utah and California during 1902 and 1903; from information furnished by members of the Bureau of Forestry, who have been engaged in field work in the other Western States; from maps and reports of the United States Geological Survey, and from information furnished by stockmen who are actually using the different ranges.

The dividing lines between the different classes of range are only roughly drawn, and are not from an actual survey; but they are approximately correct and give a good general idea of the proportion of each class of land in the different States and Territories.

The areas of cultivated land shown represent the location of important agricultural districts or comparatively large bodies of cultivated land. On account of lack of time or means of securing the necessary data, no attempt has been made to show the location of the small cultivated areas which are scattered throughout many grazing sec-

tions, and in referring to this map it must be remembered, therefore, that there are thousands of small farms scattered over the entire country which in area would each make only a little speck on the map and which, on this account and for the reason before stated, have been omitted.

The most important feature of this map is the information given regarding the proportionate amount of grazing land in each State or Territory which can be used during the entire year and that which can only be used either during the summer or winter.

The relation between summer and winter ranges and cultivated land is very close and must be carefully considered in the inauguration of any system of regulation in the use of the public grazing lands.

The summer ranges are located in the mountainous portions of the country, which are usually covered with heavy snow during the winter and can only be used for pasturing in the summer season. The length of this season of course varies greatly in different localities. Some of the mountain pasture lands in Arizona and New Mexico can be used from April 1 to November 30, while in the higher portion of the mountains of northern California, Oregon, Colorado, and other Northwestern States the pasturing season is limited from June 1 to October 15, so that of necessity pasture must be provided elsewhere during the remainder of the year.

The winter ranges are on the lands of lower altitude where the winter storms are less severe, and often in sections of the country which are very poorly watered and can only be used when there is snow on the ground or while there is water in tanks and lakes which are filled by the winter snow and rain.

In the early part of the summer, when the water and feed dry up, the stock must be taken to the better-watered ranges, which are often only found in the mountains. The use of one class of range is therefore very largely dependent upon the use of the other.

In some localities the area classified as summer range includes portions of high, barren mountains, which are of little or no value for grazing, and also areas of heavily timbered land on which there is practically no forage crop, but within these areas are often little parks or meadows which are utilized for summer pasture, and the classification in such cases therefore means that all of the grazing lands within the area are of the class designated.

The year-long ranges are those portions which have a permanent water supply, either springs, running streams, or lakes, or on which water has been developed by digging wells, and which are located at an altitude where the climate is such that the winter storms are not so severe as to endanger heavy losses in ordinary seasons.

On the ranges of Montana, Wyoming, and the Dakotas it has been found by the experience of the past that localities in which stock could usually be wintered with only a nominal loss in number would occasionally be visited by an extremely long and severe winter which would cause very heavy losses of stock. The stockmen in one bad winter would lose the profits of several good seasons. Consequently in the States mentioned an effort is made to provide feed to be used during severe winter storms, and stockmen do not feel that they are safe without it; but in case of a mild winter a large portion of the stock are allowed to remain on the open range. The area classed as year-long range in these States is therefore subject to this modifica-

tion, being used during the entire year except in case of severe winter storms.

Year-long ranges are often used as summer ranges in connection with strictly winter ranges, or as winter range in connection with strictly summer range; more commonly as the latter than the former, however, as the area of strictly summer range usually exceeds the area of strictly winter range.

In some of the States there is an area along the lower slopes of the mountains which is called spring and fall range, being used in the early part of the season before stock are driven to the summer ranges, and late in the season just before they are gathered and put in the winter pastures. This class of land as a rule is almost the same in character as the year-long range, and in making this map has been classed as such.

The utilization of the products of cultivated lands in feeding live stock is mostly confined to fattening stock for market and to winter feeding, although in some localities stock which are wintered on the public domain are fed during the summer time. The farmer, however, can get along better without the use of adjoining winter range than he can without the use of the summer range, because of the simple fact that it is during the summer that his cultivated land produces its crop, and during this season he must find other pasture for his stock.

The improvement of the range and extension of the grazing area through development of water by digging wells and erecting windmills has been mostly in the Southwest, where the climatic conditions have been such as to make such improvement necessary for the utilization of certain sections of the range. In the Northwest and on the Pacific coast the annual rainfall is sufficient to insure an abundant supply of water on most of the ranges, and consequently extensive development of water has been unnecessary.

Settlement has been an important factor in causing this class of range improvement to be made, and it is interesting to note that as settlers on agricultural or semi-agricultural lands have gradually worked westward over the Dakotas, Nebraska, Kansas, and Oklahoma the line of extensive development of water by wells and windmills has been gradually pushed along in advance. The stockman has been the forerunner of the agricultural settler, and by his enterprise in range improvement has done much to point out the way for the establishment of successful homes.

A PLAN FOR THE CONTROL AND IMPROVEMENT OF THE PUBLIC GRAZING LANDS.

That there is a very large amount of land throughout the West which under present conditions is not suitable for cultivation or located so that it can be reclaimed by irrigation nor valuable for its timber or mineral, but which is only useful for pasturing live stock, seems to be an established fact.

The area of this class of land is roughly estimated at 400,000,000 acres. With the information available it is not possible to figure the acreage accurately, but this figure will give an approximate idea of the public interest to be considered.

Having this extensive area which under present conditions is only valuable for grazing, the question of importance is, "Are these lands now being used in the best way possible for the continued development and prosperity of the country and under a system by which they will continue to be valuable for grazing purposes, or are they being used under a system which is detrimental to the best interests of the people and by which the only present value of the lands is being gradually destroyed?"

If the facts appear to establish beyond a doubt that the lands have not been used to the best advantage, and that their present condition is unsatisfactory to the people, and that the adoption of a new system of management would improve the grazing value of the land and insure a better and more permanent use of the same, then it would appear good public policy for Congress to enact such laws as are necessary to bring about the desired results.

The evidence herewith presented shows very clearly that in the opinion of the stockmen who have answered the circular sent out by the Commission on the Public Lands, the grazing value of the lands has greatly diminished and that the decrease in carrying capacity has been very largely due to overstocking and the manner in which the stock has been handled. The answers also show that the large majority are dissatisfied with the present condition of affairs and favor some system of Government control which will properly restrict the use of the public grazing lands and encourage their improvement.

In the consideration of this question in the past the argument presented has usually been in favor of or in opposition to legislation which proposed to immediately apply some definite plan to all of the grazing lands, and such action has been opposed because of the fear that the regulations would not be fitted to the varying conditions of different localities. In sections of the country where the proposed plan fitted the conditions the people would favor the passage of the law, and in all sections where it did not meet the local needs the plan was strongly opposed.

Believing that the solution of this question lies in the gradual application of a system of control to different sections of the country as public interest warrants such action and as the Government is prepared to assume such control, and also that the system of management to be applied to each district should be decided upon only after a full investigation of its needs and demands has been made, the following plan has been prepared and is respectfully submitted for the consideration of the Commission:

1. That the Secretary of Agriculture shall examine and classify the public grazing lands in Arizona, California, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Utah, Washington, and Wyoming.

2. That the President may by proclamation set apart any portion of the public lands in said States and Territories as grazing districts, and the Secretary of Agriculture shall have charge of the administration of said grazing districts.

3. That each grazing district shall be divided into such divisions as the best interests of the public demand, each division to be classified and its grazing value appraised.

Lands classified as agricultural shall be occupied for grazing purposes under annual or season permits only, and shall be subject to entry at any time.

Lands classified as grazing shall be occupied under permits with a tenure of not more than ten years, and no entry or settlement shall be allowed until after an inspection of the land applied for and approval of such entry or settlement by the Secretary of Agriculture.

All lands shall be subject to reclassification at the termination of any permit period.

4. That the Secretary of Agriculture shall appoint a supervisor for each grazing district, who shall be a practical stockman, and a qualified elector of the State, and such assistants, clerks, and inspectors as the efficient care of the district demands; allot grazing permits in the manner which he deems most equitable in each district division, and define the privileges granted thereunder; determine and charge a grazing fee for each permit; build and repair roads and trails and make other necessary improvements; decide all questions arising from the application of the law in connection with the granting of grazing privileges; and make rules and regulations for the administration of the provisions of the law.

5. That when any grazing district has been established, the Secretary of Agriculture shall fix a date not less than one year from the establishment of the district, and after such date it shall be unlawful to pasture any class of live stock thereupon without a grazing permit. Violation of this section shall be punished by a fine of not less than \$50 nor more than \$1,000, or imprisonment not less than thirty days nor more than one year, in the discretion of the court.

6. That the sum of \$500,000 be appropriated as a permanent fund to carry out the provisions of this act. All money collected for grazing fees under this law shall be used as follows: First, said appropriation fund shall be reimbursed for money expended from it in the classification, appraisal, administration, and improvement of the respective districts; second, after having made such reimbursement, then after paying the administration expenses of any district for each year the remainder of all money collected shall be expended for educational purposes or public improvements in the State in which the district is located in such manner as Congress may provide.

7. That nothing herein shall be construed to prohibit any person from entering upon such grazing districts for all proper and lawful purposes, including that of prospecting, locating, and developing the mineral resources thereof: *Provided*, That such persons comply with the rules and regulations of such grazing districts. And any mineral lands which have been or which may be shown to be such and subject to entry under existing mining laws of the United States and the rules and regulations applying thereto, shall continue to be subject to such location and entry.

8. That the President shall be authorized at any time to modify any Executive order that has been or may be made establishing any grazing district, and by such modification may reduce the area or change the boundary lines of such district, or may vacate altogether any order creating such district.

CIRCULAR TO STOCKMEN.

The following list of questions has been prepared by the Commission on the Public Lands for the purpose of securing reliable information concerning the live-stock ranges of the West:

Please answer briefly, stating what, in your opinion, appear to be the most important facts. If the space allowed is not sufficient, use a separate sheet and write the number of the question at the beginning of your answer.

1. What is the general location of the range upon which you are grazing live stock? _____.

2. Which of the following classes of stock are you raising: Cattle, horses, sheep, goats? _____.

3. How does the grass and other stock feed on your range at the present time compare with former years? _____.

4. What important changes in range conditions and the live-stock industry have taken place in your neighborhood during the past twenty years? _____.

5. (a) Has the carrying capacity of the ranges increased or diminished? _____.

(b) If it has increased, what has been the cause of such change? _____.

(c) If it has diminished, to what extent has this been due to overstocking or to the manner in which the stock has been handled? _____.

(d) To what extent to climatic changes? _____.

(e) To what extent to local legislation? _____.

6. (a) Is the public range now under better control than during former years? _____.

(b) If so, to what extent has this been brought about by securing title to or control of the water and portions of the range? _____.

(c) To what extent by mutual agreements among the stockmen regarding the use of the ranges? _____.

(d) To what extent by any other method? _____.

7. (a) To what extent has the use of the range been improved or extended by the development of water through digging wells, building reservoirs, or otherwise? _____.

(b) To what extent could the carrying capacity of the range be increased by such methods? _____.

8. (a) Would it be practicable to divide the public ranges of your neighborhood into individual pastures? _____.

(b) If not, could the range be divided into districts to be used jointly by a certain number of stockmen? _____.

(c) Could the ranges be divided between sheep owners and cattlemen without serious injury to either interest? _____.

9. (a) To what extent does the summer or mountain range control the use of the winter range? _____.

(b) Do your summer and winter ranges adjoin or are they located at a long distance apart? _____.

10. (a) Is there any serious controversy regarding the use of the public range, such as between owners of cattle and sheep, large owners and small owners, etc.? _____.

(b) What would you suggest as the most practical way of settling such matters? _____.

11. Does the sale of farm products in your locality depend upon live stock which are ranged upon the public domain during a portion of the year? _____.

12. What proportion of the vacant public land in your neighborhood is of such character that by the development of irrigation or otherwise it is likely to be settled by actual homeseekers? _____.

13. What, in your opinion, is the most practical method for the proper control and permanent improvement of the public-grazing lands? _____.

14. Do you favor Government control of the ranges under reasonable regulations, made to meet local conditions, and providing for a proper classification of the grazing lands? _____.

15. What plan would you suggest which would permit bona-fide homestead settlements on agricultural lands within a grazing district, but would at the same time protect the stockmen against bounty jumpers or claim locators whose object would be speculation? _____.

Name, _____,

Post-office, _____,

County, _____, State, _____.

A REPORT ON SYSTEMS OF LEASING LARGE AREAS OF GRAZING LAND,
Together with an Outline of a Proposed System for the Regulation of Grazing
on the Public Lands of the United States.

By FREDERICK V. COVILLE,
Botanist of the United States Department of Agriculture.

INTRODUCTION.

At the request of the Commission on the Public Lands, the writer was assigned, on January 6, 1904, to the task of preparing a report which would indicate whether by some new system of management the stock-carrying capacity of the public grazing lands could be increased and at the same time homestead settlement be stimulated. For this purpose an examination was made in May, June, and July, 1904, of the system of granting leases operated by the State of Texas, and the system of grazing permits followed by the United States Office of Indian Affairs on the San Carlos and White Mountain Indian reservations in Arizona. In August and September the examination was extended to the grazing-lease system of the State of Wyoming and that followed by the Northern Pacific Railway in connection with the arid lands of that railroad in the State of Washington. An account of these systems, so far as they seem useful in relation to the present inquiry, is given in the accompanying report. The detailed attention paid to the historical side of the Texas land system is due to the special interest of the subject and the fact that no historical account of that system has hitherto been published. It was in Texas that a method was first worked out by which to break away from the free-range system, which has proved so unsatisfactory and expensive a means of harvesting the wild forage crop of the arid region.

The writer desires to express his special obligation for assistance courteously extended to him by George P. Garrison, professor of history, and Phineas L. Windsor, librarian, of the University of Texas; John J. Terrell, commissioner of the general land office of Texas; Thomas T. Tynan, superintendent of public instruction and register of the State land board of Wyoming; and Thomas Cooper, land commissioner, and G. H. Plummer, general sales agent, of the Northern Pacific Railway Company.

THE TEXAS SYSTEM OF LEASING PUBLIC LANDS.

HISTORICAL SKETCH OF THE PUBLIC LANDS OF TEXAS.

EARLY AGRICULTURAL SETTLEMENT OF TEXAS.

The first effective agricultural settlement in Texas began in 1821. The treaty signed February 22, 1819, between Spain and the United States fixed the boundary between the two nations and made it possible for the former country, of which Texas was then a part, to give sound land titles in that territory. In December, 1820, Moses Austin, a citizen of the United States, applied to the Spanish governor of Texas for permission to bring in 300 families of settlers. Permission was granted in January, 1821. Upon the death of Moses Austin a few months afterwards Stephen F. Austin, his son, was recognized in his place. In December, 1821, Austin's first emigrants from the United States arrived in Texas, on the Brazos River.

Meanwhile Mexico had declared herself independent of Spain, and on January 4, 1823, the imperial colonization law of Mexico was signed by the Emperor, Iturbide. On February 18 of the same year Austin's grant was confirmed in accordance with this law. In March, 1823, Iturbide was overthrown, and on April 8 the imperial law was suspended. On April 11, 1823, Austin's grant was referred to the supreme executive of the Republic of Mexico, and on April 14 was confirmed. On August 18, 1824, the national colonization law of Mexico was decreed, the chief feature of which was to delegate to the several States the enactment in detail of colonization laws. The joint State of Coahuila and Texas, on March 18, 1825, enacted such a law.

Under the Mexican national law of 1824 and the State law of 1825 the terms of which were in general similar to those of Austin's first contract, additional agreements were made with Austin and other contractors, or *empresarios*, as they were called, and under this *empresario* system of colonization the agricultural settlement of Texas progressed rapidly, from the Sabine to the Nueces rivers.

On March 2, 1836, Texas declared herself a republic independent of Mexico.

STANDARD OF LAND MEASUREMENTS.

In his original plan for distribution of lands to his new settlers, presented to the Mexican governor of Texas, Stephen F. Austin proposed to give each head of a family and each single man over age a section (640 acres) of land, 320 acres additional for his wife, 160 additional for each child, and 80 additional for each slave. For some reason which does not appear from the published documents, but which is believed to have been the suspicion attached by the Mexican Government to the introduction of a new system, Austin's plan was rejected, and the imperial decree of February 18, 1823, declared that "Subject to the regulations of the Government, agreeably to the law on that point, there shall be granted to each head of a family, one labor or one league, agreeably to the occupation which he may profess," and further, "that to the colonist who besides farming also dedicates himself to the raising of stock, there may be granted a league and a labor." Under the law to which reference was made the unit of measurement was a vara (about 33½ inches); a square of land measuring 1,000 varas on a side was a labor^a (about 177 acres);

^a Accented on the second syllable.

5,000 varas constituted a league, and an area of land 1 league square was a sitio (about 4,428 acres), which in Texas was more commonly designated a square league, or simply a league. Most of the new colonists took up a labor of land on the basis of farming, and an additional league of land on the basis of stock raising, so that each instead of receiving the 640 acres originally promised by Austin, received about 4,600 acres.

The Mexican league thus became the unit for surveying land in Texas, and it was not until 1835 that the American sectional system began to be substituted. Under an ordinance and decree, passed by the provisional government of Texas, December 5, 1835, and construed by a joint resolution of the legislature of the Republic of Texas enacted November 24, 1836, a section, or mile square, or 640 acres of land, was granted to each volunteer in the Texas army.

From this beginning the sectional system came more and more into use and is now applied to most of the lands of the State. The grants of university and school lands, made in 1839, were in leagues, but most of these lands when surveyed were laid out in quarter-mile squares. To this day, however, the surveyor's mile in Texas consists not of a certain number of links or feet, but of 1,900 varas.

TEXAN JURISDICTION OVER LANDS IN TEXAS.

In the treaty of annexation, April 12, 1844, the public lands of Texas were ceded to the United States, in the following terms:

ARTICLE I. The Republic of Texas, acting in conformity with the wishes of the people and every department of its Government, cedes to the United States all its territories, to be held by them in full property and sovereignty, and to be annexed to the said United States as one of their Territories, subject to the same constitutional provisions with their other Territories. This cession includes all public lots and squares, vacant lands, mines, minerals, salt lakes and springs, public edifices, fortifications, barracks, ports and harbors, navy and navy-yards, docks, magazines, arms, armaments, and accouterments, archives and public documents, public funds, debts, taxes and dues unpaid at the time of the exchange of the ratifications of this treaty.

ART. IV. The public lands hereby ceded shall be subject to the laws regulating public lands in the other Territories of the United States, as far as they may be applicable, subject, however, to such alterations and changes as Congress may from time to time think proper to make. It is understood between the parties that if, in consequence of the mode in which lands have been surveyed in Texas, or from previous grants or locations, the sixteenth section can not be applied to the purpose of education, Congress shall make equal provision by grant of land elsewhere. And it is also further understood that hereafter the books, papers, and documents of the general land office of Texas shall be deposited and kept at such place in Texas as the Congress of the United States shall direct.

ART. V. * * * For the payment of the remainder of the debts and liabilities of Texas, which, together with the amount already specified, shall not exceed ten millions of dollars, the public lands herein ceded, and the nett revenue from the same, are hereby pledged.^a

This treaty of annexation failed of ratification by the Senate of the United States, a circumstance which affected the whole subsequent course of public land operations in Texas, and without which the great experiment of entrusting to a new State the ownership and management of the public lands within its boundaries would never have been tried.

^a S. Doc. No. 341, 28th Cong., 1st sess., pp. 10-11.

The actual annexation of Texas took place under a joint resolution of the Congress of the United States, approved March 1, 1845, and a joint resolution of the Congress of the Republic of Texas, approved June 1, 1845, the latter giving the consent of the existing Texan government to the annexation of Texas to the United States. Under these resolutions the whole land policy was reversed and Texas, admitted as a State, retained her public lands and assumed her public debt. The provisions regarding these lands, identical in both resolutions, are as follows:

Said State, when admitted into the Union, * * * shall also retain all the vacant and unappropriated lands lying within its limits, to be applied to the payment of the debts and liabilities of said Republic of Texas, and the residue of said lands, after discharging said debts and liabilities, to be disposed of as said State may direct; but in no event are said debts and liabilities to become a charge upon the Government of the United States.^a

The Republic of Texas claimed sovereignty over a territory additional to the present limits of the State, including about 65,000 square miles of the present territory of New Mexico, 19,000 square miles of Colorado, 7,700 square miles of Kansas, 4,060 square miles of Wyoming, and 5,600 square miles of Oklahoma. The Texas claim to this area of about 101,360 square miles was relinquished to the United States in 1850, in accordance with an act of the Congress of the United States approved September 9 and an act of the State of Texas approved November 25 in the same year.^b The United States paid to Texas, in consideration of the relinquishment of this claim, \$10,000,000, out of which sum Texas paid her public debt, including those obligations for which the duties on imports of the Republic of Texas had formerly been pledged.

On March 16, 1896, the claim of Texas to an area of 3,840 square miles, known as Greer County, was adjusted by the United States Supreme Court in favor of the United States.^c

The present area of the State of Texas is computed at 170,926,080 acres.^d

CLASSES OF PUBLIC LANDS IN TEXAS.

In addition to her continued policy of selling lands to settlers, Texas has made grants from time to time for the encouragement of internal improvements, chiefly railroads. The total amount of land surveyed and returned to the land office for patent under these grants was 35,768,718 acres, but by reason of conflicts in the surveys, the recovery of land through civil procedure by the State, and various other causes, the amount of land actually received by the railroads or their assigns was reduced to 24,454,713 acres.^e

By an act approved February 20, 1879, 3,050,000 acres of land was granted for the construction of a State capitol.^f

In addition to these grants the State has made other grants of land the income from which is retained for public use. Of these latter

^a Sayles, Constitutions of Texas, ed. 3, pp. 177-178. 1888.

^b General and Special Laws of the State of Texas, vol. 3, pt. 4, chap. 2, pp. 4-5. 1850.

^c U. S. Reports, vol. 162, pp. 1-91.

^d Report of the Commissioner of the General Land Office, State of Texas, 1898-1900, p. 14.

^e Report of the Commissioner of the General Land Office, State of Texas, 1898-1900, pp. 33-34.

^f General Laws of the State of Texas, 1879, chap. 13, pp. 9-11.

grants there are four classes—public school lands, university lands, asylum lands, and county school lands.

The public lands of the State became exhausted in 1890, when all the remaining vacant lands were granted to the public school fund. The so-called public lands of Texas are now not public in the sense that they may be devoted by the State to any use whatever, but they are held in trust, as it were, by the State for certain statutory purposes, educational and eleemosynary. As will be explained later, only the public school lands and the asylum lands are managed by the State, the management of the university lands and the county school lands having been intrusted by the State to the university and the counties, respectively.

COUNTY SCHOOL LANDS.

By an act of the Republic of Texas, approved January 26, 1839,^a “appropriating certain lands for the establishment of a general system of education,” 3 leagues of vacant lands in each county, or, in default of sufficient land in the county, anywhere on the vacant lands of the Republic, were set apart “for the purpose of establishing a primary school or academy in said county.” In the following year, by an act approved February 5, 1840,^b another league of land was added for each county.

The lands thus voted to the use of each county are the property of the county, are sold or leased by the commissioner's court of the county, and the revenues are devoted to county school purposes.^c Under existing statute the management of these lands has passed out of the hands of the State authorities, and their further consideration may be dismissed.

The total county school lands were 2,208,611 acres,^d and the amount remaining unsold August 31, 1902, was 1,247,920 acres.^e

UNIVERSITY LANDS.

The setting aside of lands for university purposes as a special branch of educational activity began with an act of the Republic of Texas, approved January 26, 1839, appropriating certain lands for the establishment of a general system of education. Section 4 of this act is as follows:

Be it further enacted, That the President of the Republic be, and he is hereby authorized and required to appoint a surveyor and have surveyed on and from any of the vacant lands of this Republic, fifty leagues of land; which is to be set apart and is hereby appropriated for the establishment and endowment of two colleges or universities, hereafter to be created; and that the President is hereby authorized to draw upon the treasury of this Republic for such sum or sums of money as may be necessary for defraying the expenses to be incurred by locating and surveying said lands.^f

A resurvey of these lands was authorized and the method of sale prescribed in an act of the State of Texas, approved August 30, 1856.^g

^a Laws of the Republic of Texas, 1839, pp. 134-136.

^b Laws of the Republic of Texas, 1839-1840, pp. 146-148.

^c Revised Civil Statutes of the State of Texas, 1895, articles 4270-4271, p. 852.

^d Report of the Commissioner of the General Land Office, State of Texas, 1898-1900, p. 15.

^e Thirteenth Biennial Report of the [Texas] State Superintendent of Public Instruction, p. 384. 1903.

^f Laws of the Republic of Texas, 1839, p. 135.

^g General Laws of the Sixth Legislature of the State of Texas, 1856, chap. 144, pp. 71-74.

Two years later was passed an act, approved February 11, 1858, to establish the University of Texas.^a In section 2 of this act there was appropriated to the university one-tenth of the alternate sections of land reserved by the State out of the grants made to railroads and similar corporations. These lands, situated chiefly in eastern Texas, subsequently became very valuable, and would have constituted an enormous endowment to the university, but the civil war of 1861-1865 postponed the actual establishment of that institution, and when the project was again taken up, in the Texas constitution of 1876, the land appropriation of 1858 was repealed.^b This action seems to have been taken because the lands under the values they had acquired would have created an endowment so large as to appear incompatible with the other educational and financial obligations of the State.

The constitution of 1876 did, however, appropriate 1,000,000 acres of land to the University of Texas in the following terms:

In addition to the lands heretofore granted to the University of Texas, there is hereby set apart and appropriated, for the endowment, maintenance, and support of said university and its branches, one million acres of the unappropriated public domain of the State, to be designated and surveyed as may be provided by law: and said lands shall be sold under the same regulations, and the proceeds invested in the same manner as is provided for the sale and investment of the permanent university fund; and the legislature shall not have power to grant any relief to the purchasers of said lands.^c

Another appropriation of 1,000,000 acres of land for the university was made in an act approved April 10, 1883, section 1 of which reads as follows:

Be it enacted by the legislature of the State of Texas, That after the payment of the amounts due from the State to the common free-school fund, out of the proceeds of the sales heretofore made, or hereafter to be made, of that portion of the public lands set aside for the payment of the public debt, by an act approved July 14, 1879, and an act amendatory thereof, approved March 11, 1881, and the payment directed to be made to the common school and university funds, by an act approved February 23d, 1883, the remainder of said land, not to exceed two million of acres, contained in the counties and territory specially mentioned in said acts, or the proceeds thereof, set aside by said acts for the payment of the public debt, heretofore or hereafter to be received by the State, shall one-half thereof constitute a permanent endowment fund for the University of Texas and its branches, including the branch for the instruction of colored youths, and one-half thereof shall constitute a permanent endowment fund for the common free schools of this State.^d

Under its three effective land grants, those of 1839, 1876, and 1883, the university was entitled to receive 2,221,400 acres of land. As a matter of fact, it did receive, by reason of the exigencies of the surveys, 2,289,682 acres.^e

In 1894 the authorities of the State university became seriously concerned with the question of university revenues. In that year the total receipts from such of the university lands as were leased, the total lands unsold being about 1,000,000 acres, was only \$8,865.80.^f

^a General Laws of the Seventh Legislature of the State of Texas, 1857-1858, chap. 116, pp. 148-151.

^b Constitution of the State of Texas, 1876, art. 7, sec. 11.

^c Constitution of the State of Texas, 1876, art. 7, sec. 15.

^d General Laws of the State of Texas, 1883, chap. 72, p. 71.

^e Report of the Commissioner of the General Land Office, State of Texas, 1900-1902, p. 37.

^f Sixth Biennial Report of the Regents of the University of Texas, p. 64, 1895.

A thorough investigation and reconsideration of the laws under which the university lands were managed resulted in an act presented to the governor for his approval March 1, 1895, transferring the management and control of the university lands from the State land office to the board of regents of the University of Texas.^a

By this act the management of the university lands ceased to be a function of the State, and its subsequent history will not therefore be recounted. It is of interest to note, however, that the university lands are chiefly in solid blocks, while the public school lands are chiefly in detached sections. This feature of the university lands, which was believed under the State control to make the lands less valuable for rental, proved under the system of management afterwards inaugurated to be on the whole advantageous. It may also be noted that under the management of the board of regents, which was conducted on a distinctly revenue basis, the income from the same lands which in 1894 was, as already stated, only \$8,865.80, had risen in 1902 to \$59,453.66.^b

ASYLUM LANDS.

By an act approved August 30, 1856, the State of Texas set apart for the benefit of four State asylums (lunatic, deaf and dumb, blind, and orphan) 100,000 acres of land each.^c

These asylum lands are subject to the same terms of sale and lease as the public school lands, and are under the same management—that of the commissioner of the general land office.

PUBLIC SCHOOL LANDS.

In the Texas declaration of independence, by which the people of Texas, through their delegates, on March 2, 1836, constituted themselves a sovereign Republic, independent of Mexico, one of the Texan grievances was thus formulated:

It [the Government of Mexico] has failed to establish any public system of education, although possessed of almost boundless resources (the public domain), and although it is an axiom in political science, that unless a people are educated and enlightened, it is idle to expect the continuance of civil liberty, or the capacity of self-government.^d

The idea thus formulated in the beginning, to utilize the public domain as a means for providing for public education, became a fundamental policy of the State.

The early educational grants of land, those of 1839 and 1840, to the counties and for the university have already been mentioned (pp. 36-38), but it was not until nearly four decades afterwards that Texas made that magnificent State provision for her public schools of one-half her public domain.

In 1854, by an act approved on January 30 of that year, the State, in making provision for grants of land to encourage railroad construction, reserved to the use of the State the even-numbered sections,

^a General Laws of the State of Texas, 1895, chap. 18, p. 19.

^b Tenth Biennial Report of the Board of Regents of the University of Texas, p. 49. 1902.

^c General Laws of the Sixth Legislature of the State of Texas, 1856, chap. 146, p. 76.

^d Sayles, Constitutions of Texas, ed. 3, pp. 152-153. 1888.

alternating with the sixteen sections granted for each mile of railroad. Similar provisions were made in subsequent grants.

After her recovery from the heavy obligations incident to her existence as a Republic, to her support of internal improvements in the fifties, and to the civil war, the State returned to the question of public education.

In the Texas constitution of 1866,^a article 10, sections 2-3, new provisions of the highest importance were incorporated; a State public school fund was constituted, and one-half of the proceeds of future sales of public lands was made a part of this fund, as well as the alternate sections of land reserved by the State out of grants previously made to railroad companies and other corporations.

Under the constitution of 1869 it was even contemplated to devote to the public school fund all the proceeds from the sales of public lands. This policy of utilizing the public lands as a common school endowment, however, was recast and given its final specific form in the Texas constitution of 1876, article 7, section 2, as follows:

All funds, lands, and other property heretofore set apart and appropriated for the support of public schools; all the alternate sections of land reserved by the State out of grants heretofore made, or that may hereafter be made to railroads, or other corporations, of any nature whatsoever; one-half of the public domain of the State; and all sums of money that may come to the State from the sale of any portion of the same, shall constitute a perpetual school fund.^b

It is to be noted that under this wording of the constitution of 1876 not merely half the proceeds of the sales of public lands go to the school fund, but half the lands themselves. The importance of this has become manifest since the adoption of a lease law, for in the year 1902 the proceeds from sales of school lands, \$527,480.84, was increased by \$457,656.85 derived from lands not sold but leased.

Through a decision of the supreme court of Texas, May 23, 1898 (case of *Hogue v. Baker*, 45 S. W. Rep., 1004), which unavoidably cast a cloud on the title to thousands of homesteads in the State, widespread attention was called to the fact that the school fund had not received the whole of its proportionate share of the public domain, and that the State had made grants in excess of its constitutional rights. In accordance with an act approved March 2, 1899,^c an accounting was made,^d on the basis of which an act was passed at a special session of the legislature and approved by the governor February 23, 1900,^e by which there was set apart to the public school fund all the remaining unappropriated domain, consisting chiefly of small detached tracts, commonly known as "scrap land," scattered throughout the State. The survey of these lands disclosed a total of 5,009,478 acres.^f

Meanwhile, by an act approved April 18, 1899,^g all the lands before or afterward recovered from railway companies and other persons or corporations, by reason of defective title, were appropriated to the

^a Sayles, Constitutions of Texas, ed. 3, p. 328. 1888.

^b Sayles, Constitutions of Texas, ed. 3, p. 552. 1888.

^c General Laws of the State of Texas, 1899, chap. 16, pp. 14-15.

^d See [Special] Report of Commissioner of General Land Office, State of Texas, November 1, 1899.

^e General Laws of the State of Texas, 1900, chap. 11, pp. 29-35.

^f Report of the Commissioner of the General Land Office, State of Texas, 1900-1902, p. 33.

^g General Laws of the State of Texas, 1899, chap. 81, pp. 123-124.

public school fund. The area from this source up to September 1, 1900, was 1,422,781.4 acres.^a

GROWTH OF THE LEASING IDEA.

In the act of January 26, 1839, by which the Republic of Texas devoted certain lands to county school and to university purposes (see p. 36), it was provided:

That none of the lands appropriated and set apart by this act for the purposes of education, shall be disposed of in any manner except by lease, until the expiration of three years, and none of said lands shall be disposed of by lease for a longer term than three years.^b

From this it appears that the idea of leasing lands that had been set apart for educational purposes was almost, if not quite, as old in Texas as the very policy of devoting lands to such purposes.

In the Texas State constitution of 1845, article 10, section 3, the following provision was made:

All public lands which have been heretofore, or which may hereafter be, granted for public schools to the various counties, or other political divisions in this State, shall not be alienated in fee, nor disposed of otherwise than by lease for a term not exceeding twenty years, in such manner as the legislature may direct.^c

An identical provision was made in the Texas constitution of 1861.

The leasing of county school lands thus authorized was largely ineffective. Land was on sale in abundance at such a very low price, often no more than 10 cents per acre, that few desired to make leases. Not only did this law fail to produce the desired revenue, but its very failure to become effective resulted in a popular disregard for, and lack of confidence in, the general policy of leasing State lands. One feature of the law, however, that of prohibition of the sale of school lands, had the beneficial effect of preserving these lands until they became far more valuable than they then were.

LAW OF 1879 AGAINST INCLOSURE.

Under the loose system of management of the State lands existing prior to 1879, extensive fencing of these lands had been done privately. This gave rise to "An act to require persons inclosing public free school lands to pay an annual rent therefor," approved April 17, 1879. The preamble and section 1 of this law are as follows:

Whereas, Many persons in this state have enclosed a large portion of the public free school lands, and have thus severed them from the public common and are using them for pasture to the exclusion of all others, thereby giving a just cause of complaint; therefore,

SEC. 1. *Be it enacted by the legislature of the State of Texas,* That each and every person who shall have enclosed by fencing or otherwise any of the public free school land belonging to the state, and shall use the same to the exclusion of the public, shall pay an annual rental value therefor of the sum of twenty-five dollars for each section so enclosed.^d

Later sections of the act prescribed a method of collecting the rental and the penalty for failure to make payment. No adequate

^a Report of Commissioner of General Land Office, State of Texas, 1898-1900, p. 14.

^b Laws of the Republic of Texas, 1839, p. 136.

^c Sayles, Constitutions of Texas, ed. 3, p. 215. 1888.

^d General Laws of the State of Texas, 1879, chap. 92, p. 101.

machinery, however, was provided for collecting the rents, and the law proved in fact inoperative in that respect.

INITIATION OF THE MODERN LEASING SYSTEM.

The commissioner of the general land office of the State of Texas, in his report for 1880-1882, pages 5 and 7, referred to the condition of the public school lands as follows:

If it be contemplated to carry out the ideas of those who originated the laws subsidizing railroads by donations of land, viz: to prevent the acquisition of large, solid bodies, then the present law for the sale of these lands is a failure. If a capitalist or corporation desires one hundred or five hundred sections it is only necessary, first, to secure from the railroad the title to the odd-numbered sections, and then by the use of borrowed names, or names of wife and children, to cover seven sections each, and the thing is accomplished.

Discussing the question further, he states:

My conclusions may be summed up in the words that *it* [the then existing system of sale of public lands] *is wrong in principle and worse in application.* * * *

Under the present plan of making absolute sale of these lands it is but a question of a few years when the State shall have parted with every acre possessing an intrinsic value. * * * It requires but a hasty glance at our educational statistics to discover that the greatly increased sales of these lands in the past two years have added little or nothing to the amount per head of our scholastic population. If, then, this sale for money will yield but a temporary increase of our school facilities, it behoves us to seek in time some other method for their management. Raising the price does not change [the] question, but simply postpones the final catastrophe; *and in the interest of free education* I see but one course left, and that is to *lease all pasture, timber, and mineral lands* for a term of years, and sell, if at all, only to actual settlers. It is not necessary to burthen this report with the figures, but it is easily demonstrable that a rent can be secured which will nearly, if not quite, equal the interest on any sum for which they can now be sold; and while thus securing an available fund for present use, we retain the title in an *ever-increasing principal*, which, at least for years to come, will keep pace with our growing population.

LEASE LAW OF 1883.

This report of the commissioner of the general land office was followed by a general law, approved April 12, 1883, for the classification, sale, and lease of school, university, and asylum lands. This act repealed prior laws in conflict with it, and placed the administration of the act in the hands of the State land board, composed of the governor, attorney-general, comptroller, and commissioner of the general land office. Most of the provisions of the act relate to sale of land, the most important of these in the present connection limiting the amount sold to one person to 1 section of agricultural land or 7 sections of unwatered pasture land. The provisions relating to leasing are in sections 16 and 17, as follows:

SEC. 16. Pasture lands or agricultural lands not timbered, may be leased in suitable quantities for stock and ranch purposes for not less than four cents per acre per annum, and for periods not exceeding ten years, by such agents and under such regulations as the board may prescribe. The regulations shall provide for competition. Leases shall be made in the localities where the land is situated. Where there is an application for both sale and lease the sale shall have the preference.

SEC. 17. All lands leased shall remain subject to purchase for actual settlement in bodies not to exceed six hundred and forty acres; but before said purchaser shall be permitted to buy leased land he shall swear that he intends to actually settle on it, and until he does actually settle, build, and fence thereon

the lessee shall remain in possession: *Provided*, That when the lessee has but one watered section leased from the State in the same vicinity, such section shall not be subject to sale and settlement during the term of the lease: *And provided further*, That when a sale is made of leased land then the lessee shall be entitled to have a pro rata of any rent which he shall have paid in advance refunded him by the treasurer of the State upon warrant drawn by the comptroller by order of the land board: *Provided*, That no enclosure bordering on, along or across any stream of water shall be of a width of more than four miles and a space of at least forty yards shall be left between all such enclosures.^a

This lease law was materially strengthened by the inclosure and herd law of 1884. On February 7 of that year the governor approved an act which, among other provisions, imposed a fine or imprisonment upon any person who should knowingly fence, or allow to remain fenced, land belonging to the State, or should herd stock upon such land, without a duly executed lease.^b

At first, owing to a tacit agreement among the prospective lessees, no competition was effected, the applications made and the leases signed, under the law of 1883, being uniformly at the minimum rate of 4 cents per acre, and for the maximum period of ten years. The State land board then raised the rate to 8 cents per acre. Following this action a storm broke loose from those who had long been accustomed to the free use of the State lands, and who now determined to occupy them in defiance of the law.

In the summer of 1885 the land board sent out agents to ascertain the facts as to the school lands illegally inclosed, with the names of offenders and witnesses. On the basis of the detailed information thus secured, the land board passed the following resolution:

Be it resolved, That the board report to the governor that they have learned from the commissioners sent out by the board and from other sources that the land-enclosure act and the act for the sale and lease of educational lands have been and are now being openly violated; that a scope of country in the western part of the State, embracing over one hundred thousand square miles, nearly one-half of which is educational lands, is held by a population, outside of a few small towns, of not exceeding five thousand souls; that a very large majority of these occupants are there in violation of law; that a majority of the owners of the stock are nonresidents of the State; that the timber from these lands is being cut and sold by these usurpers in an open and law-defying manner; that in this unorganized and sparsely settled country an appeal to the local civil authorities under existing laws is a useless waste of time and money; that the attempt to enter and settle upon these lands so illegally occupied is discouraged, both covertly and openly, to such an extent that settlement is retarded and the development of that portion of our State is checked. For these and many other reasons the board has reached the conclusion that one of three alternatives is presented. Either (1) new laws must be immediately passed to meet the emergencies, or (2) some plan devised by which the State constabulary force can be used to enforce the laws, or (3) the educational lands must be abandoned to the rapacity of the few and taxation resorted to for the support of our free schools.^c

The remedies proposed were not at once provided, and the administrative difficulties inherent in the law of 1883, combined with strenuous opposition on the part of the stockmen to its execution, and the uncompromising attitude of the land board, resulted in the practical inoperation of the law, so far as leasing was concerned.

^a General Laws of the State of Texas, 1883, chap. 88, p. 89.

^b For full text of the act see General Laws of the State of Texas, 1884, chap. 33, pp. 68-71.

^c Report of the Commissioner of General Land Office to the governor of Texas, 1886, pp. 7-8.

The provisions relating to the sales of land under the law of 1883 were such that very large amounts were sold, most of which tended to be consolidated in large holdings.

The land law of 1883, being unsatisfactory to so many interests, was finally superseded by the statute of 1887.

LEASE LAW OF 1887.

On April 1, 1887, was approved a new land act repealing earlier laws in conflict therewith; transferring to the commissioner of the general land office of Texas the direction of all matters pertaining to the sale and lease of the public school, university, and asylum lands; providing for the classification and valuation of these lands, and their sale for settlement in tracts not to exceed four sections, the execution of leases for such areas of these lands as were not in immediate demand for settlement, subject, in the case of lands classified as agricultural, to sale for settlement, but not subject to sale in case of tracts classified as grazing lands; and making stringent provisions against fencing the State lands, or herding stock thereon, without a lease. The full text of the law in relation to leases is as follows:

SEC. 14. The public lands, and all lands belonging to the public free school, asylum, or university funds, shall be leased by the commissioner of the general land office in accordance with the provisions of this act. Such leases shall be for a term of not more than five years, and the lessee shall pay an annual rental of four cents an acre for all pasture lands leased, which rental shall be paid each year in advance, the first payment to be made at the time the lease is executed; and if at the termination of the lease such land is still subject to lease, the lessee or lessees thereof, whose term of lease is expired, shall have the refusal of such land as he has been leasing, on the terms and at the price that may be fixed therefor by the commissioner of the general land office. All leases shall be executed under the hand and seal of the commissioner of the general land office, and shall be delivered to the lessee or his duly authorized agent, and such lease shall not take effect until the first annual rent is paid and the lease is duly filed for record in the county where the land lies, or to which it may be attached for judicial purposes, and it shall not be necessary for the commissioner to acknowledge such lease before the same is placed on record.

SEC. 15. Any person desiring to lease any portion of the public lands, or the lands belonging to the several funds mentioned in this act, shall make application in writing to the commissioner of the general land office, specifying and describing the particular lands he desires to lease; and thereupon the commissioner, if satisfied that the lands applied for are not in immediate demand for purposes of actual settlement, and that such lands can be leased without detriment to the public interest, shall notify the applicant in writing that his proposition to lease is accepted; and thereupon he shall execute and deliver to the lessee, and in the name and by the authority of the State, a lease of said land for such term as may be agreed upon, and deliver the same to such lessee, when satisfied that the lessee has paid to the treasurer of the State the rent for one year in advance. No lands classified as grazing lands under this act shall be subject to sale during the existence of such lease, and the possession thereof by the lessee shall not be disturbed during the term of such lease so long as the rents are paid promptly in advance each year as required by this act. The lands classified as agricultural lands which may be leased under this act, shall be leased subject to sale as provided by this act, and whenever such leased lands may be purchased the lessee shall give immediate possession to such purchaser: *Provided*, That the lessee shall have a pro rata credit upon his next year's rent, or the money refunded to him by the treasurer, as he may elect: *Provided*, That no such sale shall be permitted where such lessee shall have previously placed improvements of the value of one hundred dollars upon such section of land so sought to be purchased: *And provided further*, That no actual settler who shall purchase land within any leasehold shall be permitted to turn loose more than one head of cattle or horses for every ten acres of land purchased by him and unenclosed, or, in

lien thereof, four head of sheep or goats to every ten acres of land so purchased and unenclosed. Each violation of the provisions of this act which restricts the number of stock that may be turned loose on lands leased from the State shall be an offense, and the offender on conviction shall be punished by fine of not less than one dollar for each head of stock he may so turn loose, and each thirty days' violation of the provisions of this section shall constitute a separate offense.

SEC. 16. All lessees shall pay the annual rents due for leased lands directly to the treasurer of the State, who shall execute receipts in duplicate for each payment made by any lessee, one of which receipts shall be delivered to the lessee, and the other transmitted to the commissioner of the general land office. The treasurer shall cause to be kept an accurate account with each lessee, and the commissioner of the general land office shall file in his office all applications and other papers relating to leases, and keep a record of all leases made, which papers shall constitute a part of the records of his office.

SEC. 17. If any lessee shall fail to pay the annual rent due in advance for any year, within sixty days after such rent shall become due, the commissioner of the general land office may declare such lease cancelled, by a writing under his hand and seal of office, which writing shall be filed with the papers relating to such lease, and thereupon said lease shall immediately terminate, and the lands so leased shall become subject to purchase or lease, as the commissioner may determine for the best interest of the State. And during the continuance of all leases, and after forfeiture, the State shall have a lien upon all the property upon the leased premises to secure the payment of all rents due, which lien shall be prior and superior to all other liens whatsoever, and it shall not be essential to the preservation or validity of such lien that it shall be reserved in the instrument of lease.

SEC. 18. It shall be unlawful for any person to fence, use, occupy, or appropriate, by herding or line-riding, any portion of the public lands of the State, or of the lands belonging to any particular fund specified in this act, without having first obtained a lease of such lands in accordance with the provisions of this act. Any person, whether owner of stock, manager, agent, employe, or servant, who shall fence, use, occupy, or appropriate, by herding or line-riding, any portion of such lands without a lease thereof, shall be deemed guilty of a misdemeanor, and shall, upon conviction, be fined not less than one hundred nor more than one thousand dollars, and in addition thereto shall be imprisoned in the county jail for a period of not less than three months nor more than two years. Each day of such fencing, using, occupying, or appropriating, by herding or line-riding, shall be deemed a separate offense, and any person so offending may be prosecuted, by indictment or information, in the proper court of the county where any portion of the land lies or to which it may be attached for judicial purposes, or in the county of Travis, and jurisdiction of such offenses is hereby vested in said courts: and in case any indictment or information is preferred or filed against a nonresident of this State for a violation of this section, it shall be the duty of the governor to demand the extradition of the defendant from the proper officer of any State or Territory where he may be found, in order that he may be brought to trial. "Fencing," within the meaning of this act, is the erection of any structure of wood, wire, or both, or any other material intended to prevent the passage of cattle, horses, mules, asses, sheep, goats, or hogs, whether the same shall enclose lands on all sides or be erected on one or more sides. Any appropriation of land belonging to any particular fund specified in this act, or of the public lands of this State, without first having obtained a lease thereof, by fencing of any kind, or by enclosures consisting partly of fencing and partly of natural obstacles, or impediments to the passage of live stock, shall be deemed an unlawful appropriation, punishable as provided in this section for appropriating such lands, and each day said land is so appropriated shall be deemed a separate offense.

SEC. 19. The provisions of this act as set forth in the preceding section, shall not apply to persons who are moving, or gathering, or holding for shipment any stock mentioned in said article: *Provided*, The said persons have not erected any fence on such lands, or continue on said lands longer than one week.

SEC. 20. All enclosures of or fences upon any portion of the public lands or the lands belonging to the public free school, asylum, or university funds, without lawful authority, shall be removed within sixty days from the time this act shall take effect. If the governor is informed at any time, upon the affidavit of some credible person, that any portion of the public lands, or lands belonging to the public free school, asylum, or university funds, have been enclosed, or that

fences have been erected thereon without authority of law, he is authorized, in his discretion, to direct the attorney-general to institute suit in the name of the State for the recovery of such land, and damages for the use and occupation of such land, and the removal of such enclosures and fences. Such suit may be instituted in the district court of any county where the land, or a portion thereof, is situated, or in the district court of Travis County; and upon application of the attorney-general, and without affidavit or bond, the clerk of the court in which suit is instituted shall issue a writ of sequestration, directed to any sheriff of the State of Texas, commanding and requiring such officer to take such land and all property thereon into his actual custody, and the same hold subject to the further orders of the court. Such writ of sequestration may be executed by any sheriff of the State into whose hands it may be delivered, and it shall be the duty of any sheriff into whose hands it may come, to proceed and execute such writ, and the governor is required, in his discretion, to furnish such sheriff with the necessary force of volunteer militia or other military force of the State to accomplish the purposes of the writ and to execute the process of the court. The defendant in such writ may replevy, as in ordinary cases, by giving bond as prescribed by law, and such cases shall have precedence on the docket, and stand for trial before all other causes; and in case judgment is recovered by the State in such suit the court shall order such enclosures or fences to be removed, and shall tax the costs of suit, including the cost of the military force, if any, against the defendant; and all the property found upon the land belonging to the defendant shall be liable for such costs and damages in addition to the personal liability of the defendant. Appeals may be prosecuted from all judgments in such cases, as in ordinary cases, except that the State shall not be required to give bond to perfect its appeal, and such cases on appeal shall have precedence over all other causes.

SEC. 21. It shall be unlawful for any person or corporation who may have used any of the lands by joining fences or otherwise, to build or maintain more than three miles lineal measure of fence, running in the same general direction, without a gateway in same, which gateway must be at least ten feet wide, and shall not be locked or kept closed so as to obstruct free ingress and egress: *Provided*, That all persons who have fences already constructed in violation of the provisions of this act shall have two months from the time this act takes effect within which to conform with the provisions hereof: *Provided further*, If any person or persons shall build or maintain more than three miles lineal measure running in the same direction, without providing such gateway, he shall be deemed guilty of a misdemeanor, and upon conviction shall be fined in any sum not less than two hundred dollars nor more than one thousand dollars, and each day that such fence remains without such gateway shall constitute and be punished as a separate offence: *Provided further*, That the construction of gates as provided for in this section shall apply only to pasture lands: *Provided further*, When herds of cattle, horses, sheep, or goats are driven through this State from one place to another place in this State, and it becomes necessary for such stock to pass through any enclosed pasture of any person who has leased any of the aforesaid lands, such lessee of such enclosure shall permit such stock to pass through such pasture: *Provided*, The owner of such stock so driven through any such enclosure shall move the same as expeditiously and with as little delay as practicable through such enclosure.

SEC. 22. The commissioner of the general land office, under the direction of the governor, may withhold from lease any agricultural lands necessary for purposes of settlement, or, in his discretion, he may lease such agricultural lands in small quantities for a less period than five years, as the public interest and development of the country may seem to require; and no agricultural lands shall be leased if in the judgment of the commissioner they may be in immediate demand for settlement, but such lands shall be held for settlement and sold to actual settlers only, under the provisions of this act; and all sections or fractions of sections in all counties organized prior to the first day of January, 1875, except El Paso, Pecos, and Presidio counties, which sections are detached and isolated from other public lands, may be sold to any purchaser except to a corporation, at not less than two dollars per acre, upon such terms as the commissioner of the general land office may prescribe.

SEC. 23. The sum of eighty thousand dollars, or so much thereof as may be necessary, is hereby appropriated, out of the several funds belonging to the public free schools, asylums, and university, to pay the expenses of executing this act, which sum shall be apportioned between said funds according to their

respective interests and the work necessary to be done, and shall be expended by the commissioner of the general land office, with the approval and under the direction of the governor.

SEC. 24. Leaseholds created under the provisions of this act shall be exempt from all taxation.^a

By an act approved April 8, 1889, several sections of the law of 1887 were amended, the amendments referring chiefly to the terms of sale to settlers. The changes relating to leasing were in sections 14, 15, and 22, which were amended so as to read as follows:

SEC. 14. The public lands, and all lands belonging to the public free schools, asylums, or university fund, shall be leased by the commissioner of the general land office in accordance with the provisions of this act. All of such lands lying north of the Texas and Pacific Railroad and east of the Pecos River shall be leased for a period not longer than six years, except as hereinafter provided; and all lands lying south of the Texas and Pacific Railroad, and all lands west of the Pecos River, and all university lands, and all lying in the counties of Andrews, Gaines, Terry, and Yoakum, shall be leased for a period not longer than ten years, and the lessee shall pay an annual rental of four cents per acre for all lands leased: *Provided*, That the university lands may be leased at three cents per acre per annum, which rental shall be paid each year in advance, the first payment to be made at the time the lease is executed, and if at the termination of the lease such land is still subject to lease, the lessee or lessees thereof whose term of lease is expired shall have the refusal of such land as he has been leasing on the terms and at the price that may be fixed therefor by the commissioner of the general land office. All leases shall be executed under the hand and seal of the commissioner of the general land office, and shall be delivered to the lessee or his duly authorized agent, and such lease shall not take effect until the first annual rent is paid and the lease duly filed for record in the county where the land lies or to which it may be attached for judicial purposes, and it shall not be necessary for the commissioner to acknowledge such lease before the same is placed on record.

SEC. 15. Any person desiring to lease any portion of the public lands belonging to the several funds mentioned in this act, shall make application in writing to the commissioner of the general land office, specifying and describing the particular lands he desires to lease; thereupon the commissioner, if satisfied that the lands applied for are not in immediate demand for purposes of actual settlement, and that such lands can be leased without detriment to the public interest, shall notify the applicant in writing that his proposition to lease is accepted; and thereupon he shall execute and deliver to the lessee, in the name and by the authority of the State, a lease of said land for such term as may be agreed upon, and deliver the same to such lessee, when satisfied that the lessee has paid to the treasurer of the State the rent for one year in advance. No lands classified as grazing lands under this act shall be subject to sale during the existence of such lease, and the possession thereof by the lessee shall not be disturbed during the term of such lease so long as the rents are paid promptly in advance each year, as required by this act. The land classified as agricultural land, which may be leased under this act, shall be leased subject to sale as provided by this act; and whenever such leased land may be purchased, the lessee shall give immediate possession to such purchaser: *Provided*, That the lessee shall have a pro rata credit upon his next year's rent or the money refunded to him by the treasurer, as he may elect: *Provided further*, That no such sale shall be permitted where such lessee shall have previously placed improvements of the value of one hundred dollars upon such section of lands sought to be purchased. That no purchaser or other person than the lessee shall be permitted to turn loose within such leasehold more than one head of horses, mules, or cattle, for every ten acres of land purchased, owned, or controlled by him and unenclosed, or in lieu thereof four head of sheep or goats to every ten acres of land so purchased, owned, or controlled and unenclosed. Each violation of the provisions of this act which restricts the number of stock that may be turned loose on lands leased from the State shall be an offense, and the offender on conviction shall be punished by fine of not less than one dollar for each head of stock he may so turn loose, and each thirty days violation of the provisions of this section shall constitute a separate offense.

^a General Laws of the State of Texas, 1887, chap. 99, pp. 83-91.

SEC. 22. The commissioner of the general land office, under the direction of the governor, may withhold from lease any agricultural lands necessary for purposes of settlement, and no agricultural land[s] shall be leased if in the judgment of the commissioner they may be in immediate demand for settlement, but such lands shall be held for settlement and sold to actual settlers only, under the provisions of this act, and all sections or fractions of sections in all counties organized prior to the first day of January, 1875, except El Paso, Pecos, and Presidio counties, which sections are detached and isolated from other public lands, may be sold to any purchaser, except to a corporation, without actual settlement, at not less than two dollars per acre, upon such terms as the commissioner of the general land office may prescribe.^a

Under an act approved April 28, 1891, further changes were made in the provisions for leasing so that sections 14 and 15 were made to read as follows:

SEC. 14. The public lands and all lands belonging to the public free schools, asylums, or university fund shall be leased by the commissioner of the general land office, under the provisions of this act. All of such lands lying west of the Pecos River, and all of such lands lying south of the Texas and Pacific Railroad, except the counties of Concho, McCulloch, Coke, Sterling, Glasscock, Midland, Ector, Tom Green, Howard, and Martin, and all university lands shall be leased for a period of not longer than ten years, and all other such lands lying north of the Colorado River, and north of the Texas and Pacific, and the counties hereinbefore excepted from the ten-year lease shall be leased for a period not longer than five years, and the lessee shall pay an annual rental of four cents per acre for all lands leased: *Provided*, That the university lands may be leased at three cents per acre per annum, which rental shall be paid each year in advance, the first payment to be made at the time the lease is executed, and if at the termination of any lease any of such lands are not in demand for actual settlement they may be again leased for another five years, and the lessees thereof, whose term of lease has expired, shall have the refusal of such land as he has been leasing on the terms and at the price that may be fixed therefor by the commissioner of the general land office, and all leases shall be executed under the hand and seal of the commissioner of the general land office, and shall be delivered to the lessee or his duly authorized agent, and such leases shall not take effect until the first payment of annual rent is paid and the lease duly filed for record in the county where the land lies, or to which it may be attached for judicial purposes, and it shall not be necessary for the commissioner to acknowledge such lease before the same is placed on record.

SEC. 15. Any person desiring to lease any portion of public lands belonging to any of the funds mentioned in this act, the sale and lease of which is not provided for by any other law, shall make application in writing to the commissioner of the general land office, specifying and describing the particular lands he desires to lease; thereupon the commissioner, if satisfied the lands are not in demand for purposes of actual settlement, and that such lands can be leased without detriment to the public interest, shall notify the applicant in writing that his proposition to lease is accepted, and thereupon he shall execute and deliver to the lessee in the name of the State a lease of said land for such terms as may be agreed upon, not longer than the period of time fixed by this act, according to its location, and deliver the same to such lessee when satisfied that the lessee has paid to the treasurer of the State the rental for one year in advance; no lands which are now or which may hereafter be classified as grazing lands within the territory where ten years' lease is authorized, as set forth in the preceding section of this act, shall be subject to sale during the term of the lease contract thereof, and the possession of the lessee shall not be disturbed during the term of his lease. All lands the lease of which is fixed by this act at not exceeding five years, shall be leased subject to sale: *Provided*, That if any lessee has actually settled upon any section of land included in his lease, and erected thereon his residence and substantial improvements, for permanent settlement such section shall not be sold, nor shall such settler be disturbed during the term of his lease, and all leases of agricultural lands embraced in the territory where a lease not exceeding ten years is provided for in this act shall be subject to sale to actual settlers, except when settlement and improvement

^a General Laws of the State of Texas, 1889, chap. 56, pp. 52-53.

are made, as hereinbefore provided for in this section, by the lessee. In all case when an actual settler may desire to settle on any grazing land, which may have been leased under a five-year contract of lease, such actual settler shall first erect thereon substantial improvements of the value of not less than one hundred dollars, within four months after making his application to purchase Satisfactory proof of which shall be made under such regulations as the commissioner of the general land office may require; thereupon the land shall be awarded to him. In such case the lessee shall have a pro rata credit on his next year's rental of any other lands which may be included in his lease contract, or the money for the unexpired year of the lease of such purchased portion of his leased lands refunded to him by the treasurer of the State, as he may elect. No purchaser or other person than the lessee shall be permitted to turn loose within such leasehold more than one head of horses or mules or cattle for any ten acres of land purchased, owned, or controlled by him and unenclosed; or, in lieu thereof, four head of sheep or goats to every ten acres so purchased, owned, or controlled and unenclosed. Each violation of this provision of this act, which restricts the number of stock that may be turned loose on lands leased from the State, shall be an offense, and the owner on conviction shall be punished by a fine of not less than one dollar for each head of stock he may so turn loose, and each thirty days' violation of the provisions of this section shall constitute a separate offense. None of the requirements for improvements to be made by an applicant to purchase shall be required of any person who shall desire to buy and settle upon any agricultural lands under lease made under the provisions of this act. In all cases where any lessee shall forfeit his contract of lease by failure to pay annually in advance the money due on his lease, whether such lease was heretofore or may hereafter be made, and whether for a ten or five year lease, the lands embraced in any such contract shall thereafter be leased subject to sale as hereinbefore provided.^a

Under this law of 1887-1891 extensive agricultural settlement was made on subarid lands in western Texas, which by reason of the reduced rainfall of 1891 and 1892 were not sufficiently productive to enable the purchasers to meet the payments required by the statute. These adverse agricultural conditions were accentuated by the depressed industrial conditions that prevailed in 1893 and later. The feeling became general that relief should be granted, both to purchasers and lessees, and as a result a new land law was enacted in 1895.

PRESENT LEASE LAW FOR PUBLIC LANDS IN TEXAS.

The existing laws under which the State lands are leased are based on an act presented to the governor for his approval April 4, 1895,^b as amended by an act approved April 16, 1895,^c and by an act presented to the governor for his approval May 7, 1897,^d and on an act approved April 19, 1901,^e which had the effect of amending the preceding acts.

As compared with the land law of 1887, the law of 1895 with its amendments reduced the minimum price of grazing land from \$2 to \$1 per acre and of agricultural land from \$3 to \$1.50, and reduced the interest on payments, which under both laws could run for forty years, from 5 to 3 per cent.

The full text of the existing land statutes of Texas is given in a 32-page pamphlet, published in 1903, entitled "Digest of the School Land Laws of Texas, with Rules and Regulations Adopted by the Commissioner of the General Land Office of Texas, and Recommended for Approval by the Attorney-General, and Approved by

^a General Laws of the State of Texas, 1891, chap. 114, pp. 181-182.

^b General Laws of the State of Texas, 1895, chap. 47, pp. 63-75.

^c General Laws of the State of Texas, 1895, chap. 48, pp. 75-77.

^d General Laws of the State of Texas, 1897, chap. 129, pp. 184-188.

^e General Laws of the State of Texas, 1901, chap. 125, pp. 292-297.

the Governor." The articles relating to leases occupy pages 19 to 25. In view of the accessibility of this digest, it is unnecessary to quote the laws in full here. The provisions relating to leases may be itemized, without an attempt to state them in their technical legal form, as follows:

1. A person desiring to lease must make application to the commissioner of the general land office, describing the land he proposes to lease.
2. Lands not considered by the commissioner of the general land office in immediate demand for settlement are subject to lease.
3. Lands are leased to the highest responsible bidder in such quantities and under such regulations as the commissioner of the general land office may consider to be for the best interest of the State, not inconsistent with the equities of the occupant.
4. The period of the lease is not to exceed five years.
5. The minimum rental is 3 cents per acre per year.
6. The rent is to be paid yearly in advance.
7. The following counties are in the absolute-lease district, and leased lands in these counties are not open to settlement during the term of the lease:

El Paso.	Ward.	Crockett.	McMullen.
Jeff Davis.	Yoakum.	Sutton.	Webb.
Presidio.	Terry.	Valverde.	Duval.
Brewster.	Gaines.	Edwards.	Nueces.
Reeves.	Andrews.	Kinney.	Zapata.
Pecos.	Ector.	Maverick.	Starr.
Loving.	Midland.	Zavalla.	Hidalgo.
Winkler.	Upton.	Dimmit.	Cameron.
Kimble.	Crane.	Lasalle.	

8. Outside the absolute-lease district agricultural lands within a leased area are open to settlement.

9. Outside the absolute-lease district a settler within a leased area has a right to lease, within a radius of 5 miles of the land occupied by him, an area of not more than three sections of the land of the larger lessee, provided the larger leasehold is not reduced to less than ten sections.

10. When a leasehold is reduced by settlement or inside lease a corresponding reduction is made in the rental.

11. Outside the absolute-lease district, a lessee can not be disturbed in his possession of any section or part of a section (a) if he has actually settled and erected thereon his residence and substantial improvements for permanent settlement; (b) if he has placed thereon improvements to the value of \$200; (c) if the aggregate of the land owned and leased by a settler (the lessee) does not exceed one section.

12. Lands leased in the absolute-lease district shall not be again leased, after the expiration of a lease, for sixty days, during which time they are subject to sale.

13. At the expiration of the sixty days' purchase period after the termination of a lease in the absolute-lease district a lessee has for thirty days the preference right to a new lease.

14. At the expiration of a lease the lessee shall have sixty days' prior right to make a purchase as an actual settler from his leased lands.

15. No settler or other person shall turn loose within a lessee's inclosure more than 1 head of large stock or 4 head of small stock ~~for~~ each acre of land controlled by him and uninclosed.

16. A lease may be canceled when the lessee fails for sixty days to pay the rental due.

17. Improvements made by a lessee on lands leased by him are his personal property which he has the right to remove within sixty days after the expiration of his lease.

18. A person may upon application to the commissioner of the general land office of the State, accompanied by a bond of good faith, secure a ninety days' option to lease land on which no permanent supply of water exists, during which time he may ascertain whether such a permanent supply can be developed.

The principal provisions of the existing fence and herd laws which bear directly upon the lease law are as follows:

1. It is unlawful to fence or to occupy by herding or by line riding, without a lease, any portion of the public lands of the State.

2. Such fencing or occupancy is a misdemeanor.

3. The penalty is a fine of \$100 to \$1,000 and imprisonment in the county jail for three months to two years.

4. Each day of such fencing or occupancy is a separate offense.

5. Prosecutions for illegal fencing or occupancy of the public lands may be made either before the court of the county in which the land lies, or before the court of Travis County, the county in which the capital of the State is situated.^a

The principal general provisions for sale of lands, in their bearing on leases, are as follows:

1. The lands are classified by the commissioner of the general land office as agricultural, grazing, or timbered; and they are subject to reclassification.

2. Not more than four sections may be purchased by one person, and not more than two of these shall be agricultural land.

3. The purchaser must make oath that he is not acting in collusion with others for the purpose of buying the land for any other person or corporation, and that no other person or corporation is interested in the purchase thereof.

4. Before land is patented to a purchaser, he or the person from whom he bought it, or both together, must have resided on it for three years.

5. Improvements to the value of at least \$300 must have been made on the land before a patent is granted.

6. If more than one section is purchased, the additional lands must be within a radius of 5 miles of the land occupied by the purchaser.

BENEFITS OF THE LEASING SYSTEM.

Usually when an area of land is leased from the State it is at once fenced by the lessee, so that the stock of other owners can not drift upon it nor the lessee's stock stray off it. The lessee is able to manage the land just as if it were his own. The benefits arising from such a condition are manifold. The more important may be enumerated as follows:

^a General Laws of the State of Texas, 1895, chap. 47, sec. 25, p. 74.

1. The stock owner knows the precise area upon which he can depend for pasturage, and he can adjust the amount of his stock to it and handle his whole business upon a more definite and less speculative basis. Under the open-range system a stockman does not know what his grazing resources are to be and his business is upon a correspondingly precarious foundation.

2. The lessee if a prudent man will not overstock his fenced range, but will restrict his stock to the amount that the land will carry easily, leaving the grass in a state of the highest continued productiveness from year to year. Under the open-range system a rancher had little incentive to do this, for the better the range about his ranch the more would cattle from neighboring overgrazed ranges drift in upon him.

3. The cost of rounding up stock for branding or for marketing is much less when the animals are to be found within a known fenced area than when they may have drifted apart over an area of sometimes several counties.

4. On small fenced ranches there is a constant tendency to supplement the carrying capacity of the range by growing dry-land forage crops, notably Kafir corn. The amount of stock on one of these small ranches is often doubled in this way. Under the open-range system this supplementary feeding of stock is impracticable, as the animals have usually drifted far from the ranch to which they belong.

5. In time of prolonged drought or of winter storm cattle in fenced ranges can often be saved from starvation, when if they were on the open range at a long distance from feed and too weak to travel to it they must inevitably be lost.

6. By a subdivision of a leased area into two or more pastures, many lessees reserve for their winter range an area which has not been pastured during the summer. Such an arrangement is always advantageous to the stock and in a severe winter it may obviate serious losses.

7. Within a leased and fenced area there is a great incentive to the development of a good water supply for stock. A large area of range may contain an abundant supply of grass, which is going to waste because it is so far from water that stock can not graze it. On some of the large Texas ranches windmills and reservoirs have been constructed at such intervals that the animals need not go more than 2 or 3 miles for water. Cattle thrive much better at this distance than they do at 5 or 6 miles. A distance of 10 or 12 miles is almost prohibitive for cattle. The development of stock water through experimental borings on large ranches has been a particularly prominent feature of the Texas leasing system. The manager of one large ranch asserted that by the development of a well-distributed water supply his range was made to carry 50 per cent more stock than before. After a reasonable probability of securing water in a certain region at an economical depth has been demonstrated, the boring of wells is quickly taken up by all the settlers.

8. A better breed of cattle is usually maintained on fenced ranges, where high-grade bulls can be kept with much less danger of loss than on the open range, and the parentage of all young stock can be known.

9. The percentage of increase in breeding stock is greater under the leasing system, because in fenced areas the date of turning in the bulls with the cows can be controlled and the date at which the calves are

born can be fixed at not earlier than the 1st of April, when the weather has moderated. Under the open-range system many of the calves were born earlier, when the mothers were in too weak condition, from the severity of the weather, to suckle them. At the end of unusually severe winters on the open range not only was there a high percentage of lost calves, but the cows themselves often died from the shock of calving.

10. Cattle stealing has been much reduced as a result of leasing. Under the open-range system the owner of a few cattle is at a distinct disadvantage, in the matter of finding his stock, in comparison with a large owner. The latter, having many employees, can watch his stock over a wide territory, look after them with a fair degree of success, and be represented at every branding roundup in the region. The small owner, having no employees, can not keep track of all his stock, drifting as they often do over a very large territory, and some of his calves he loses through failure to find and brand them. In order to make good these losses and increase his herd the small owner on the open range is constantly subjected to the temptation of putting his own brand upon cattle which he knows do not belong to him. Under the open-range system the stealing of cattle is more easily justified by the thief, and detection is much more difficult than when he must enter an inclosure containing a single brand in order to do his stealing.

11. The use of fear, threat, and open violence as means of controlling portions of public land for range purposes has almost disappeared in Texas. Under the lease law the rights of stock owners and of settlers are defined, and an appeal to the civil courts by anyone whose rights have been infringed takes the place of an appeal to violence. Under the open-range system the honest and law-abiding cattleman was at a great disadvantage, while the "bad man" occupied a position of corresponding advantage. The period of fence cutting and lawlessness which followed the extensive leasing and fencing of land in the Texas Panhandle was the last endeavor of an outlaw element to manage the range problems of that region by force. The prompt and effective prosecution of some of the offenders landed them in the penitentiary, most of the others decided to obey the law, and a few of the inveterate thieves drifted into other States, where the open-range system enabled them to ply their business with greater chances of success. In southern Arizona it is a notorious fact, to which attention is frequently called by the old residents of that Territory, that the worst epidemic of cattle thieves, highwaymen, and train robbers that ever afflicted that region followed close on the establishment of the range-leasing system in Texas.

12. The sentiment is general among Texas cattlemen that the carrying capacity of the range has increased. There is every reason to expect such an increase, but it is difficult to get precise information of the amount of stock formerly carried on any area because under the open-range system the number of cattle on each tract was constantly changing. The cattle statistics for the whole State, however, as shown in the following table furnished by the Bureau of Statistics of the Department of Agriculture, offer some suggestive facts.

Number and value, on January 1, of cattle other than milch cows in Texas, 1875-1904.

Year.	Number.	Value.	Year.	Number.	Value.
1875	2,367,400	\$17,755,500	1890	7,167,453	\$63,294,283
1876	2,349,700	22,429,209	1891	7,021,496	62,444,260
1877	3,390,500	31,328,220	1892	7,021,496	62,177,330
1878	3,458,300	25,620,490	1893	6,462,536	58,512,448
1879	4,800,000	43,920,000	1894	6,581,787	62,604,840
1880	4,464,000	39,640,320	1895	6,061,444	59,081,024
1881	4,072,240	41,333,236	1896	5,518,044	69,520,010
1882	3,443,784	42,014,165	1897	5,212,712	58,417,443
1883	4,410,000	65,223,900	1898	4,821,395	73,639,656
1884	4,277,700	74,902,527	1899	4,531,997	76,665,937
1885	4,234,923	66,784,736	1900	4,352,541	77,736,384
1886	4,023,177	52,298,087	1901	7,782,226	125,655,715
1887	6,084,766	73,292,232	1902	8,171,137	113,959,919
1888	6,536,504	68,077,993	1903	8,007,010	109,698,754
1889	7,098,884	65,907,243	1904	8,087,189	81,928,083

Whatever other factors may have had an influential bearing, there can be little doubt that the doubling of the number of cattle in Texas since 1884 has been largely influenced by the leasing system which began to be put into effect in that year. The decrease which followed the financial depression of 1893 and which was still further accentuated in the late nineties by the very heavy demand from the northern ranges for young stock from Texas has been followed in the last three years by a rise in the number of Texas cattle to above the 8,000,000 mark.

13. The annual revenue derived by the State of Texas from the leasing of public school lands is now nearly half a million dollars. The receipts from 1895 to 1902 are shown in the following table:

Annual receipts from lease of public school lands in Texas.

Year ending August 31—

1895	\$170,476.71
1896	216,369.10
1897	234,108.06
1898	321,858.90
1899	357,424.79
1900	472,672.40
1901	412,118.50
1902	457,656.85

The public school land remaining unsold on August 31, 1902, was 22,080,225 acres, of which 13,700,235 acres were under grazing lease.

14. One of the most notable results of the Texas lease law has been its stimulation of settlement. Lands which, under the open-range system, had attracted few settlers, but which were later leased subject to the right of entry and settlement, seemed to become immediately attractive to settlers. This may have been due in part to the demonstrated increased carrying capacity of the land under the lease system, but it appears that the chief influence lay in the fact that the lease acted as an advertisement of the land. The settler seems to have reasoned that land that was sufficiently productive and valuable to warrant a cattleman in leasing it at a substantial rental must certainly be good enough for settlement. Owing to perniciously lax provisions in the Texas law relating to settlement, by which a settler's title to land could be transferred after only a very brief residence upon it, a large part of the settlement in leased areas was

of a mercenary character, made not for the purpose of getting a home, but for the purpose of selling out to the lessee of the large tract in which the false settlement was made. Notwithstanding, however, the defects of the settlement law and its manipulation by land grabbers, extensive bona fide settlement has been made in the best of the leased lands, and on the expiration of many existing leases the remaining areas covered by them will be wholly given over to settlement.

THE WYOMING SYSTEM OF LEASING STATE LANDS.

THE STATE LANDS OF WYOMING.

At the time of its admission into the Union as a State, July 10, 1890, Wyoming was granted or had already been granted by the United States, for educational and other public purposes, over 4,000,000 acres of land, as follows:

Act of Congress approved—	Acres.
February 18, 1881-----	46,080
May 28, 1888-----	640
July 10, 1890-----	3,995,440
Total-----	4,042,160

In accordance with these and subsequent acts of Congress, the total amount of land granted to Wyoming by the United States up to September 30, 1902, was 4,127,211.44 acres.

By a provision in an act of the State of Wyoming approved January 10, 1891, no State lands can be sold at less than \$10 per acre.^a The effect of this law is evidenced by the fact that up to September 30, 1902, only 5,113.78 acres, or a little more than one-tenth of 1 per cent of the State lands, had been sold. The State now owns, therefore, about 4,000,000 acres of land.

PROVISION FOR LEASING STATE LANDS.

In order to derive a revenue from these lands the State has enacted laws providing for their lease. These laws were enacted at various sessions of the legislature, as follows:

- Laws of 1890-91, chapter 79, approved January 10, 1891.
- Laws of 1897, chapter 34, approved February 24, 1897.
- Laws of 1897, chapter 44, approved February 24, 1897.
- Laws of 1899, chapter 33, approved February 16, 1899.
- Laws of 1899, chapter 86, approved February 21, 1899.
- Laws of 1899, chapter 90, approved February 21, 1899.
- Laws of 1901, chapter 71, approved February 16, 1901.
- Laws of 1901, chapter 82, approved February 19, 1901.
- Laws of 1903, chapter 78, approved February 21, 1903.

The laws now in effect, together with the administrative rules relating to them, have been compiled in a 37-page pamphlet published in 1903, entitled, "Rules of the State Board of Land Commissioners and the State Board of School Land Commissioners of the State of Wyoming, and Statutes Governing."

The administration of the State lands of Wyoming is in the hands of a board made up of the governor, the secretary of state, the State treasurer, and the State superintendent of public instruction. The

^a Revised Statutes of Wyoming, 1899, sec. 821.

superintendent of public instruction is also secretary and register of the land board, and in his office the land records are kept and the business relating to the sale and lease of State lands is transacted. By one section of the State constitution (art. 18, sec. 3) the State board of land commissioners, who were to have charge "of all lands * * * granted to the State," was to be composed of the governor, the superintendent of public instruction, and the secretary of state; but another section of the same constitution (art. 7, sec. 13), in specifically intrusting to the State board of land commissioners the control "of the lands of the State granted * * * for the support and benefit of public schools," included also in its enumeration of the members of that board the State treasurer. Evidently the conflict between these two articles was a mere accident, but in order to leave no ground for question as to legality of the acts of the land commissioners, two boards have been organized, one designated "the State board of land commissioners" and the other "the State board of school land commissioners," differing in their personnel and functions only as indicated above. For the purposes of this report they are treated as one board.

Of the lands owned by the State, about 3,000,000 acres are situated in isolated tracts of 1 square mile (640 acres), constituting sections 16 and 36 of most of the townships of the State. The remainder, about 1,000,000 acres, is situated in tracts of varied location. The locations are made by the State authorities, chiefly in accordance with the requests of persons who desire to lease or purchase the tracts which they ask the State to select. The lands thus selected are situated prevailingly along streams or are otherwise watered, but some of them are without water, but located in such a manner as to enable persons owning noncontiguous watered sections or alternate sections purchased from the Union Pacific Railroad land grant to consolidate their holdings by purchasing or leasing the intervening lands from the State.

METHOD OF LEASING.

A person desiring to lease State lands files with the land board a petition or application sworn to before a notary public and accompanied by a fee of \$1. In his petition the applicant designates the lands he wishes to lease and states what rental he is willing to pay, whether the land contains stock water, and whether any of it can be irrigated, and in addition gives various other items of information about the land, including a detailed plat. The petition is accompanied by a document called an "evidence of value," which consists of detailed questions, with replies, bearing on the value of the lands proposed to be leased, which is filled out and sworn to by a disinterested person.

The application goes before the land board, which meets monthly, and if the rental offered is satisfactory to the board and no other objections appear, and no competitive bids are received, the application is granted. From information contained in the application, or secured by the State land appraisers, or derived from any other source, the board in granting the application may increase the rental. If there are two or more valid applications for the same tract the board sets a time and place, usually the county seat of the county in which the land is situated, at which the land is awarded by auction

to the highest bidder, the board having, however, the power to reject any or all bids if in their judgment there has been fraud or collusion.

An award having been made, a lease and bond are drafted and forwarded to the applicant for signature. The document is then returned to the land board, accompanied by the first year's rental, for execution and record, and finally is sent to the lessee. The bond is commonly for twice the amount of five years' rental.

The maximum period of rental is five years. In actual practice, a lease is very rarely executed for a shorter period.

The usual rental for land which is not irrigable and which has no stock water on it is 2½ cents per acre; for similar land with a spring or stream suitable for watering stock, commonly 5 cents; for irrigable lands, 25 cents. In special cases these rentals may be modified. For example, nonirrigable waterless lands which have been specially selected by the State, upon application of a person who agreed to lease them from the State after selection, are usually leased for 5 cents per acre. The average rental per acre at biennial periods from 1892 to 1902 has varied from 4 to 5 cents per acre. No data are available showing the acreage leased at the various rates, nor is it possible to state the total area used as grazing land and that which is irrigated. The percentage of the latter, however, is very small.

The rental is payable annually in advance.

A preference to lease is given to citizens of the State.

The lease may be canceled if it proves to have been procured by fraud or misrepresentation. This provision has the effect of restricting the lessee to the uses to which he proposed, in his letter of application, to put the land. A lease can not be terminated by the board except for the reason above assigned and for failure to pay the rental.

At the end of the lease is a printed blank form of assignment by which the lessee may assign his rights under the lease to some other person. This assignment, however, does not release either the lessee or his bondsmen from their liabilities. Under the State's interpretation of a provision of the act of admission, of July 10, 1890 (sec. 5), no person is allowed to hold under lease more than 640 acres of land granted for educational purposes. There is thus a definite limit to the amount of land of this class which can be controlled by assignment. In the case of noneducational State lands, however, of which the State owns 530,951.05 acres, there is no limit set by statute or rule of the board to the amount which an individual or corporation can hold by assignment.

If a lessee fails to pay his rental on the date set he is notified of his delinquency, and upon his repeated failure to make payment the bondsmen are notified and the delinquent rental is collected from them. The board may also, and sometimes does, cancel the lease of a persistently delinquent lessee and lease the land to a new applicant.

Upon the expiration of a lease new applications for the land may be made, the board proceeding as before, except that the former lessee has a preferred right to take the lease at the rental set by the board. The preferred right of a lessee, however, extends on educational land to only one section (640 acres), on noneducational land to only four sections (2,560 acres), and if there were competitive applicants for new leases on a large area of noneducational land the lease of which

had expired, the original lessee would have to enter an open competition for all the land he attempted to control in excess of his preferred four sections. The preferred right of renewal may be exercised three times, giving the lessee a presumable occupancy of the land for twenty years.

A large majority of the leases, probably more than 95 per cent altogether, are renewed in whole or in part either by the original lessee or by the person to whom he may have sold his land.

If a lessee has made permanent improvements on an area of leased land, and at the expiration of the lease a new lease of the land is acquired by another person, or if such land is sold by the State to any person other than the lessee, the purchaser must pay to the former lessee, the owner of the improvements, such a price as they may agree upon, or, in case of disagreement, such price as the land board through a board of appraisers appointed by them may place on the improvements. In a majority of actual cases the two interested parties agree. Occasional cases, however, come to the land board, and none of their appraisals, for the past six years at least, has been contested.

COMMENTS ON THE WYOMING LEASING SYSTEM.

The advantages of the Wyoming system of leasing State lands are, in general, similar to those of the Texas system. These advantages have not, however, been so sweeping in Wyoming, from the fact that only a small part of the lands of Wyoming are at the disposal of the State, by far the larger part being still the property of the Federal Government. In general the requirements and equities of the small rancher have been much more fully recognized than in Texas, and one of the worst effects of the Texas system, the consolidation of large areas in single ranches through the purchase of settlers' rights, has been largely avoided in Wyoming, because there the actual consolidation of lands through purchase has been prevented by the constitutional provision making the minimum price of State lands \$10 per acre, which is more than the present or even the prospective value of most of these lands. In Texas the minimum price is \$1 per acre.

The popularity of the Wyoming system, as indicated by its growth, is well illustrated by the following summary:

Summary of leases, 1892-1902.

Date.	Number of leases in effect.	Amount of land under lease.	Amount of rental.	Average rental per acre.
Sept. 30—		Acres.		Cents.
1892	305	154,337.39	\$7,397.47	4.793 (4)
1894	453	303,946.82	13,408.09	4.411 (4)
1896	570	301,101.76	15,508.99	3.965 (4)
1898	1,448	888,613.57	37,431.40	4.212 (4)
1900	3,145	1,518,066.14	75,614.65	5.000 (5)
1902	4,005	2,302,501.47	95,925.30	4.166 (4)

REVENUE.

As a source of revenue the leasing of State lands in Wyoming has been notably successful, the income from rentals having steadily increased from \$7,397.47 in 1892 to \$95,925.30 in 1902. The money derived from leases is devoted to various public purposes. Thus out

of the total rentals in 1902, \$73,585.92 was credited to educational purposes, including the common schools, university, and agricultural college, while the remaining \$22,339.38 was credited to public buildings, fish hatchery, State libraries, and various penal and charitable institutions.

THE DEMAND FOR GRAZING LAND.

That the Wyoming leasing system meets, in a manner satisfactory to the lessees, a definite demand for more grazing land under individual control, is evidenced by the steady increase in the amount of land leased, as indicated by the following table:

Statistics of Wyoming State lands at biennial periods.

Year.	Lands granted. ^a	Lands located.	Lands sold.	Lands subject to lease.	Lands leased.	Per cent leased.
1892	4,042,171.34	3,567,499.40	720.00	3,568,779.40	154,337.39	4
1894	4,042,011.34	3,657,630.01	740.00	3,656,890.01	303,246.62	8
1896	4,042,011.34	3,783,464.93	1,063.30	3,782,401.63	391,101.76	10
1898	4,149,445.23	4,022,368.83	1,178.84	4,021,189.99	888,613.57	22
1900	4,127,211.44	4,084,757.75	3,202.82	4,081,554.93	1,513,066.14	37
1902	4,127,211.44	4,101,908.57	5,113.78	4,096,794.79	2,302,501.47	56

^a The amounts of land granted are taken from the biennial reports of the register of the State land board.

Of the lands available for lease 4 per cent had been leased at the end of the first year, 1892, 8 per cent in 1894, 10 per cent in 1896, 22 per cent in 1898, 37 per cent in 1900, and 56 per cent in 1902. This showing is the more remarkable when it is considered that these lands lay side by side with many millions of acres of Government land which could be grazed upon, and which were grazed upon, without any rental whatever. Most of the State lands were, it is true, better than the average of the Federal lands and were often selected with reference to the control of grazing on adjacent Federal lands, so that the annual rental, 4 to 5 cents per acre, must not be taken as representing the value of the grazing privilege on Government lands in general. The main fact, however, is strikingly evident that exclusive control of grazing land through rental by the person owning and running stock upon it is of distinct advantage to the owner as compared with the free use of the public range.

Most of the 44 per cent of State land not leased in 1902 lay in isolated tracts of 1 mile square, devoid of a water supply, and so situated that there was no competition for the privilege of grazing on it. The user of adjacent lands enjoyed the use of the State tract without the necessity of paying for it. The Wyoming trespass law^a is invoked to compel persons to lease land which they have fenced contrary to that law, but it is not enforced to bring about the leasing of unfenced State land which is used and occupied by driving herded stock upon it.

DISCRETIONARY POWERS OF THE STATE LAND BOARD.

The most interesting feature of the Wyoming leasing system as compared with the Texas system is that which permits the land board to exercise discretionary powers in awarding leases to competing

^a Revised Statutes of Wyoming, 1899, sec. 838.

applicants. Under the Texas system original awards are made irrespective of any moral claim a resident of the area may have to the lease of a certain piece of grazing land by reason of its proximity to his homestead. Under the Wyoming system the moral right of a homesteader under such conditions is, in practice, recognized. The law under which the board takes such discretionary action is, "The board shall lease all State lands in such manner and *to such parties as shall inure to the greatest benefit* and secure the greatest revenue *to the State.*"^a Under the authority of this law and in cooperation with the commission (consisting of the State engineer and the superintendents of the four water divisions of the State) which locates or selects the State lands a rule has been established in accordance with which an owner of watered or improved lands is recognized as having a "semblance of right" to the use of grazing lands immediately surrounding the lands he owns. The leasing preference given to such a landowner extends to a distance of 1 mile from his own holdings, and in the exercise of its discretionary powers the board may extend the preference still farther.

A landowner is not, however, permitted to abuse his preference right. Should he systematically fail to apply for the lease of adjacent State land, thus depriving the State of its rentals for a period of years, and should some other more remote landowner then apply for the land, the lease would be promptly granted to the applicant, even though the adjacent landowner should then try to exercise his preference right. Furthermore, should the rental of a tract be raised through its increased valuation by the land board before entering into a new lease, the preference of the adjacent landowner would not secure him the new lease unless he were willing to pay the increased rental.

There is an apparent opportunity here for a more distant landowner who is at the same time a large rancher to outbid a small landowner for the lands immediately adjacent to the latter. No case of the kind appears, however, to have come before the board in recent years, and should such a case arise the board would in all probability decline to accept the bid of the large rancher if his bid were evidently excessive and intended to harass the small landowner.

SIZE OF LEASED AREAS.

As shown in the table on page 57 the total number of leases in effect on September 30, 1902, was 4,005, covering 2,302,501.47 acres. This gives an average of 575 acres per lease. It must be borne in mind, however, that the Wyoming law restricts the amount of educational land that can be leased to one person to 640 acres. Of the 4,005 leases in effect on September 30, 1902, only 309 were leases of noneducational land, the size of which is not directly restricted. These leases, therefore, give a more accurate idea of the size toward which grazing leases tend to gravitate under the Wyoming system.

The total area covered by the 309 leases was 296,333 acres, an average of 959 acres. Of the whole number of leases, 245 were for less than 1,000 acres each; 34 for 1,000 to 2,000 acres; 11 for 2,000 to 3,000 acres; 2 for 3,000 to 4,000 acres; 11 for 4,000 to 5,000 acres; 1 for

^a Revised Statutes of Wyoming, 1899, sec. 813. Italicics ours.

5,170 acres; 1 for 6,151.34 acres; 1 for 7,880 acres; 1 for 11,705 acres; 1 for 27,584 acres; and 1 for 34,405.96 acres.

ASSIGNMENT OF LEASES.

Of the 309 leases described above, 45, or 15 per cent, had been assigned. Thirty-three persons had received a single assignment each, three had received two assignments, and two had received three assignments. The total area assigned to the five persons who received more than one assignment was 480, 800, 1,200, 1,760, and 3,041 acres, respectively. The information at hand does not show whether any one of the 45 assignees was already a lessee of other State lands, but even if any of them were, the extreme of consolidation would extend to only one additional lease. It is clear that under the Wyoming system no extensive consolidation of grazing lands has been effected by means of the actual assignment of leases.

THE NORTHERN PACIFIC SYSTEM OF LEASING RAILROAD LANDS IN EASTERN WASHINGTON.

DETERIORATION OF RAILROAD GRAZING LANDS.

The Northern Pacific Railroad Company acquired from the Government, through its original and additional land grants, the odd-numbered sections or square miles in a strip of country 50 miles wide on each side of the line. These sections the company proceeded to sell, in accordance with its policy of transportation development, for lumbering or for agricultural purposes, but as time went on the fact developed that certain lands were not salable. These lands proved to be treeless areas, too dry or too rocky for wheat farming or so situated as not to be readily suited to reclamation by irrigation. The lands were valuable only for grazing purposes. They consisted chiefly of sagebrush plains and of "scab lands."^a

An examination by the company in the year 1895 showed that large areas of these lands had been practically denuded of grass by overgrazing. Everyone who desired to do so had been allowed to graze his stock on the railroad lands without any restriction whatever and without the payment of any fee for the grazing privilege. As a continuation of the then existing conditions would inevitably result in a still further decrease in the value of the lands, it was decided to try the experiment of leasing them. The objects in view were, first, to improve the condition of the land by granting to a single individual the exclusive use of a tract for a sufficient number of years to make it to his interest not to overgraze it and to prevent others from doing so; and, second, to secure a sufficient revenue to offset the expenditure for taxes and administration.

INAUGURATION OF A LEASING SYSTEM.

It was found at the outset that stockmen would not willingly pay for the use of land which they had previously used without cost,

^a A large part of eastern Washington was once covered by a sheet of lava. The rock formed by this lava is chiefly of a hard, basaltic character, and has weathered into a stiff, dark, claylike or "gumbo" soil, constituting the famous wheat lands of that region. Over large areas, however, the decomposition of the rock has been imperfect and the land is so rough that it can not be plowed. Such areas are known as "scab lands."

particularly as they were at that time skeptical regarding the recuperative possibilities of overgrazed ranges. It therefore became necessary to use coercive measures. The means were found in the common law of trespass, which, in the State of Washington, was reenforced by a statute, enacted in 1888, as follows:

It shall be unlawful in this State for sheep to enter any land or lands, inclosed or uninclosed, belonging to or in the possession of any person other than the owner of such sheep, unless by the consent of the owner of such land, other than the public lands of the United States.

An injunction was granted by the circuit court of the United States for restraining 30 of the most prominent sheep owners in the counties of Adams, Whitman, Franklin, Columbia, Garfield, and Wallawalla from trespassing on the railroad lands. The granting of this injunction was followed by a conference between the stockmen and the representatives of the railroad, at which the object of the railroad was explained and the details of the proposed leasing system were discussed. As a result of this conference the sheep owners made application for the ranges they desired, based largely on what they had actually been using. The conflicts in the applications were adjusted after an examination of the lands, the lines between the ranges being finally drawn so as to attach to the watering places the best lambing grounds and the upland grazing areas most naturally and usefully connected with them. The cattle owners of the region, learning that it was proposed to lease portions of the range to sheep owners, also made applications to lease, in order to protect their own interests. Their applications were considered and adjusted along with the others. The ranges thus outlined were then leased to the various applicants. The first lease went into effect July 1, 1896.

In the summer of 1897 the railroad proceeded to the establishment of the same system of leasing in the counties of Klickitat, Yakima, Kittitas, Douglas, and Lincoln. The leading sheep owners of this district energetically opposed the proposition and went so far as to sign a paper^a binding themselves (1) not to lease the lands unless the railroad company would make a written agreement to keep all sheep, cattle, and horses, except those of the lessee, off the land when leased, (2) not to pay a rental in excess of the taxes paid by the railroad on the land, (3) to share in the expense of litigation over a test case against compulsory leasing, and (4) not to lease without submitting the contract to a specified committee for approval. This agreement was in effect an agreement not to lease at all, for the first condition recited above it was obviously impossible to fulfill. The matter stood thus for a time and various conferences were held. Finally, notwithstanding the agreement, the leases began to be made, and during the remainder of 1897 and 1898 the lands were rapidly taken up under this system. By the end of the latter year 237 leases had been made.

OPERATION OF THE SYSTEM.

The ultimate object of the railroad was not to establish a permanent system of leasing, but to demonstrate the increased value of the land when under individual control, and thereby stimulate its purchase by the lessees or others. So extensive have been the sales as a result of

^a See p. 63.

this plan that out of a total of over 300 leases, only 31 were in effect on September 10, 1904. The lands covered by some of these 31 leases had already been sold, subject to occupation by the lessee during the remainder of the lease period, and it is probable that most of the remainder will be purchased by the lessees before their leases expire.

It is evident these 31 remnant leases would not furnish suitable material for a statistical view of the leases as a whole, and for that reason an earlier date, October 25, 1901, has been selected, because it is fairly representative and happens to be convenient.

Up to October 25, 1901, 289 leases had been made, and of these 104 were in force on that date. Nine lessees held two leases each, and one three leases, making the total number of lessees 93.

The total number of acres under lease was 739,428.

The average annual rental was \$1.87 per hundred acres, or a little less than 2 cents per acre.

The size of the leaseholds is indicated by the following table:

Number of lessees.	Size of leasehold.	Number of lessees.	Size of leasehold.
14	<i>Acres.</i>		
9	1,000 or less.	1	12,000 to 13,000
4	1,000 to 2,000	2	13,000 to 14,000
6	2,000 to 3,000	2	14,000 to 15,000
6	3,000 to 4,000	3	15,000 to 16,000
8	4,000 to 5,000	1	17,000 to 18,000
6	5,000 to 6,000	1	18,000 to 19,000
2	6,000 to 7,000	1	19,000 to 20,000
8	7,000 to 8,000	1	20,000 to 21,000
9	8,000 to 9,000	3	21,000 to 22,000
3	9,000 to 10,000	1	25,000 to 26,000
4	10,000 to 11,000	1	33,000 to 34,000
2	11,000 to 12,000	1	60,000 to 61,000

It should be stated here that the table given above does not convey an accurate idea of the extent to which farmers have secured small pasture areas of arid land. Since the early part of 1898 the railroad has declined to lease areas of less than 640 acres, but has freely sold them.

The average annual rental per head for the sheep pastured on these leaseholds was $3\frac{1}{2}$ cents; for cattle, $35\frac{1}{2}$ cents.

The number of acres for each head of sheep was $1\frac{1}{2}$; for each head of cattle, $14\frac{1}{2}$.

TERMS OF THE LEASES.

The principal points in the leases were as follows:

1. The period of the lease, in all except a few of the earlier ones, which were for ten years, was five years.
2. The rental was to be paid annually in advance.
3. The lands were to be used solely for grazing purposes, and were not to be overgrazed so as to cause permanent injury to the grazing or to destroy it.
4. Should any portion of a leasehold be required for irrigation purposes the lease of such portion might be canceled on thirty days' written notice, the rental on the whole leasehold to be reduced proportionately.
5. Any fences constructed by the lessee must comply with the requirements of the State law.

6. All fences and other improvements made by the lessee, if not removed by him within sixty days after the termination of the lease, became the property of the railroad.

7. The lessee was not to assign his lease or any interest therein, or sublet any of the land, without the written consent of the railroad.

8. In default of payment of the rental, or in default of any covenant of the lease, the lease might be canceled and all improvements forfeited to the railroad.

BENEFICIAL EFFECTS OF THE NORTHERN PACIFIC SYSTEM.

The beneficial results of this leasing system are of two classes, depending on whether the lessee fenced his lands or left them unfenced. In the case of unfenced lands the benefits of leasing are only partial. Cattle and horses, being free to roam at will, graze upon leased as well as unleased lands. Sheep, however, under the Washington law, commit trespass when they are driven on leased or private land, even if it is unfenced.

It is hardly necessary to enumerate the advantages that have been derived from this leasing system by the State as a whole and by the individual lessees. The general effect has been to replace a disorderly, precarious, wasteful, and costly system of harvesting the natural grass product of the region by an orderly, safe, economical, and productive system.

That the Northern Pacific leasing system in the State of Washington was satisfactory to the lessees is strikingly shown by two documents, the first of which is as follows:

We, the undersigned, members of the Yakima Wool Growers' Association, of Yakima County, Washington, do hereby bind and obligate ourselves not to rent any lands from the Northern Pacific Railway Company, in the county of Yakima, Washington, for the purpose of sheep grazing, unless the said Northern Pacific Railway Company covenants and agrees with the parties leasing, by a written contract or agreement, to keep all range stock, such as sheep, cattle, horses, etc., other than the stock of the person leasing said land, off and from the said lands so leased, during the existence of said lease at the cost and expense of said Northern Pacific Railway Company. We further bind and obligate ourselves not to pay any sum as rental which shall exceed the amount of the annual taxes paid by said Northern Pacific Railway Company on the said lands so rented, if any parties to this agreement should rent lands from the said company for said purposes according to the terms expressed in this agreement.

I further bind and obligate myself to pay my pro rata share of the expenses of any litigation that may arise between the said Northern Pacific Railway Company and the members who sign this agreement, on account of any of said members in any way causing a test case to be made as to how far the Northern Pacific Railway Company can compel a sheep man to rent grazing lands from said Northern Pacific Railway Company.

We hereby further bind and obligate ourselves to enter into no contract with the Northern Pacific Railway Company relating to the leasing of lands without submitting the same for approval to the president, vice-president, and secretary of this association, and we further agree, one with another, that in the event that any legal proceedings are instituted by said Northern Pacific Railway Company against any member of this association, growing out of his occupation of any of the lands in the grazing of sheep, cattle, or horses, or any attempt is made to eject him from said land, that the president, vice-president, and secretary of this association are hereby appointed a committee for the purpose of taking such action as they may deem expedient in the premises, and of employing such counsel as they may think best to protect the interest of any member of the association under such circumstances.

This document, which was drawn up in the summer of 1897, received 29 signatures, representing an ownership of 149,400 sheep. It was a protest against the proposed inauguration of a leasing system which these owners without warrant regarded with suspicion and dread simply because they had formerly used these lands as commons, without rental.

The leasing system, however, was put into operation and so satisfactorily did it work that the Yakima Wool Growers' Association, to which the 29 signers of the protest of 1897 belonged, passed a resolution at a meeting held January 13, 1900, as follows:

Resolved, That the secretary of this association be instructed to write the Washington delegation in Congress and request that they use their best endeavors to pass Senator Foster's bill relative to the leasing of Government grazing lands.

These two expressions of opinion by the same body of men are a fair illustration of the general suspicion and opposition with which it has been customary to regard any proposal for the control of grazing on open range lands, and the reversal of that suspicion and opposition when an equitable system for the regulation of grazing is actually understood and tried. Those persons, indeed, who have enjoyed the benefits and appreciated the advantages of range leasing, as in Texas, Wyoming, and Washington, are usually such strong advocates of the adoption of some similar system for Government lands that they often fail to appreciate the dangers and the lack of equity in some of the proposed systems that they have indorsed.

A SYSTEM FOR THE REGULATION OF GRAZING ON THE PUBLIC LANDS OF THE UNITED STATES.

It has seemed best to summarize my conclusions relative to a remedy for existing grazing evils on the public lands in the form of a brief outline of a proposed system of Government control. The inauguration of the system would require new legislation. Its success or failure would depend largely on the character of its administration. Discretionary powers are necessary if the law is to be successful in adjusting the equities of range occupants, and these same discretionary powers, if placed in the hands of incompetent or unscrupulous administrators, would bring disaster to the public interests and dishonor to the public service.

The chief administrator of the proposed system must be, first of all, a man of unquestioned integrity. He should have a thorough knowledge of the live-stock industry of the western United States, preferably such a knowledge as is derived from actual former experience as a stock raiser. He should have had long experience with land matters and methods. He should have a firm grasp of agricultural and other economic conditions in the Western States, particularly with reference to irrigation and the utilization of forests. He should have a wide acquaintance with western men, so that he would be able to select as his assistants those best equipped for the work. He should be of a judicial temperament and determined in his decisions. He must, of course, be a man of thorough administrative ability, and he should have had experience in the administration of Government work.

OUTLINE OF A PROPOSED SYSTEM FOR THE REGULATION OF GRAZING ON THE PUBLIC LANDS OF THE UNITED STATES IN ORDER TO INCREASE THEIR GRAZING PRODUCTIVENESS, PROVIDE FOR THEIR ORDERLY OCCUPATION AND USE, AND PRESERVE THEM FOR ACTUAL HOMESTEAD SETTLEMENT.

1. Public lands in the arid-land States to be occupied for grazing purposes under Government permits only.

2. The Government permit system to be put into effect on any area only when such area lies within a grazing district established by proclamation of the President.

3. Prior to the proclamation of a grazing district the lands proposed to be included in the district to be classified, so as to distinguish those suitable for agricultural purposes from those chiefly valuable for grazing purposes and not suitable for agriculture, the latter to be called "grazing lands."

NOTE.—Irrigable lands would in general be classified as agricultural, but an area of arid land which the Government proposed to irrigate only at the expiration of a period of years would meanwhile be classified as grazing land.

4. Lands classified as agricultural to be occupied for grazing purposes under annual permits and to be subject to homestead entry.

5. Lands classified as grazing to be occupied for grazing purposes under limited perennial permits, the period of the initial permit for any area not to exceed five years.

NOTE.—For lands which shall have been demonstrated by later experience to be beyond the possibility of utilization for irrigation or for dry agriculture, grazing permits for ten, or even fifteen, years may prove desirable, but it is not considered advisable that the first permits should be for a longer period than five years.

6. An area classified as grazing, covered by a permit, and of only single range homestead capacity not to be subject to homestead entry during the period of the permit.

NOTE.—By an area of "range homestead capacity" is meant an area of grazing land equivalent, in its capacity to support a family, to a 160-acre homestead of good agricultural land. The acreage would vary widely according to the carrying capacity of the land and its situation relative to a market for stock. Under ordinary conditions, however, it would mean from four to eight sections (2,560 to 5,120 acres).

7. An area classified as grazing, covered by a permit, and of greater than single range homestead capacity to be subject to homestead entry, provided that only such portion may be so entered as shall, after official examination in response to the application of the person declaring intention to make the entry, be reclassified as suitable for agriculture.

8. The permits to be issued with exclusive pasturage rights to individuals whenever practicable, but when local range conditions make it necessary with rights for several individuals in a community pasture.

9. Lands to be subject to reclassification at the termination of the permit period, especially in response to applications for the reclassification of particular tracts originally classified as grazing, but believed by the applicants to be suitable for agriculture.

10. After reclassification new permits to be issued as before on the basis of the new classification, provided that before the new permits are issued for lands classified as grazing, and of greater than range homestead capacity, such lands shall be open for a short period

to homestead settlement, one settler to each tract of range homestead capacity.

NOTE.—The settlement that would take place under this provision would consist not of farms, but of small stock ranches. The settler would get title to a homestead of 160 acres, by itself insufficient for his support, but he would have the use of enough additional adjoining land to raise the stock necessary for an actual range homestead.

11. On lands first classified as grazing and subsequently opened for homestead settlement either by reason of reclassification as agricultural land or by reason of the expiration of a permit, no person to make homestead entry until he has received an official certificate that the land he proposes to enter is legally subject to entry, the issue of such certificate to be based on declaration of intention to make entry, such declarations to be receivable either before or after the land is open for settlement, and to have precedence in the order in which they are received.

NOTE.—The procedure outlined in this paragraph is intended to prevent confusion and to restrict the entries as far as possible to real settlers. Each certificate should be valid for a limited period, say thirty days, after which, if the holder had not made entry, a new certificate would be issued to the next applicant.

12. A bona fide homestead settler on either surveyed or unsurveyed land, or the owner of a homestead under actual culture, to have the preference to a grazing permit for lands within 1 mile of his homestead.

13. Subject to the 1-mile homestead preference, the person actually occupying the land for grazing purposes prior to the installation of the permit system to have a permit preference over a person not so occupying it.

14. When new permits are issued for lands covered by an expiring permit, a range homesteader to have a preference to such adjacent land as he is prepared to put to his own beneficial use for grazing purposes, not to exceed an area of single range homestead capacity.

15. Subject to the changes involved in reclassification and to the preferences of homesteaders, the holder of an expiring permit to have the preference to a new permit, provided that during his occupation the land has been maintained in a condition of productiveness satisfying official requirements.

16. No transfer or assignment of permits to be allowed without official approval, and proposed assignments that would consolidate permits not to be approved.

17. A permit to be liable to cancellation whenever in the judgment of the administrative authority it was obtained by fraud or misrepresentation or is used to defeat the object of the law.

18. A permit for any area not to be granted to another than the person holding the preceding permit for the same area unless the new permittee shall produce satisfactory evidence that he has purchased the improvements of the preceding permittee at a price mutually agreed upon between the two, or, in case of disagreement, at a price determined by official appraisal.

19. Payment for permits to be made annually, in advance, the amount to be determined by an official appraisal and named in the permit, but the payment to be not less than one-half cent nor more than 5 cents per acre per annum, or, when the permit is granted on a

per capita basis, not less than 5 cents per head per season for small stock or 25 cents for large stock.

20. The money received for permits to constitute a special fund out of which shall be paid, after the initiation of the system by a direct appropriation, the cost of administration of the system, including the cost of classification and appraisal, the balance of the receipts in excess of the cost of administration to be applied, in a manner to be hereafter provided by Congress, to the construction and maintenance of roads in the several districts, the sum to be apportioned to a particular district to be, as nearly as may be, in accordance with the revenue derived from that district.

21. The grazing permit system to be administered by the Secretary of Agriculture.

22. Each grazing district to be in charge of a superintendent, who shall have a practical knowledge of the range stock business and shall be a resident of the State in which the district, in whole or in part, is situated, and who shall, when necessary, be aided by one or more district range inspectors.

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